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Worldwide Report

TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

No. 267

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REVIEW OF MICROCOMPUTER ADVANCES, MARKET SITUATION

Melbourne THE AGE in English 8 Feb 83 p 34

[Text]

The microcomputer can put computing power into the hands of nearly everyone, being the smallest, cheapest and most readily available machine.

Partly because of this the microcomputer market is the most crowded and competitive in Australia, with more than 100 companies competing.

In five years the local microcomputer industry has grown to one which this year will generate about $110 million in revenue.

The development of the microprocessor in 1971 opened the way for personal computing power, and then, in 1977, came such companies as Apple Computer.

Today, Apple has 22 per cent of the Australian microcomputer market.

It is matched by Tandy Corporation, and Commodore, Digital Equipment, Hewlett-Packard, Dick Smith and National Panasonic share 25 per cent.

The remaining 31 per cent contains between 80 and 100 other companies, all seemingly existing on a share which in most cases amounts to less than one per cent.

A new micromputer is launched nearly every week, often very similar to many of those launched before it.

Although the market is constantly expanding there is little doubt that many of the companies will either be forced out of business or be taken over.

Another factor likely to affect smaller suppliers is the entry of industry giants such as IBM, Wang, ICL, Matsushita and Digital Equipment Corporation.

Launched in the United States about 12 months ago, the IBM Personal Computer created a stir in the American micro market, and it was predicted that about 200,000 units would be sold in the first year, generating revenue of about $1 billion for the $30 billion-a-year company.

Demand was such that IBM has only just got around to launching its Personal Computer in Australia, this week.

Beating IBM to the punch, Matsushita launched its IBM-compatible look-alike, the National Panasonic JB3000 in Australia last April, and it is indicated that Matsushita will be manufacturing all the IBM PCs for the local market.

Other recent entries by larger corporations include the Wang Professional Computer and Digital's Decmate 2 PC 200, which was released last month.

The machines launched by such companies have a dual function — stand-alone terminals for small business or personal computing use and terminals in office networks.

They occupy the top end of the market, generally priced between $5000 and $10,000.

At the bottom end are units such as the Sinclair ZX Spectrum, at about $230, which is little more than a microprocessor in a keyboard that hooks into a color TV.

Commodore's Vic 20 is similar. Selling for $400, it has attracted a great deal of interest because of the computing power it packs into such a small box.

Also attracting considerable attention at the lower end are the Atari 400, at $599, and the Atari 900, at $1399, both of which are distributed in Australia by Futuretronics.

The low end of the market is generally aimed at the home enthusiast, and most people wishing to run their businesses on a personal computer would shy away from such machines as the Sinclair and the Atari.

Moving up, there are a number of systems which fall into both the home and business computer category. The Apple II, launched about five years ago, is a very strong seller.

One could expect to pay anywhere from $3000 upwards for a Apple system, depending on the requirements for software floppy disk drives and printers, but even a fully configured system is well within the budget of a small business.

With 5000 users worldwide there is little doubt that the Apple has strong apeal for any nuymber of applications.

Any number of machines fall between midrange and top end.

In this area are Texas Instrument's machines, plus Tandy's TRS-80 — Tandy's larger system, which costs $6999 with a single disk drive or $7898 for the dual drive model.

Alongside is the Oki 800, distributed in Australia by Sigma Data Corporation, at $7050, and the Sirius 1, a 16-bit unit at $5295 which was designed by the "father of the microcomputer," Mr Chuck Peddle, who designed the highly successful Commodore Pet.

CSO: 5500/7545

AUSTRALIA

EXPERT REVIEWS DIGITAL COMMUNICATIONS NEEDS, PROSPECTS

Melbourne THE AGE in English 1 Feb 83 p 31

[Article by Graeme Domm]

[Text] **Australia needs to be prepared for a revolution in communications technology which is already affecting industry and Government, according to a senior academic.**

Dr Yow-Lam-Oh, head of the recently formed department of robotics and digital technology at Chisholm Institute of Technology, believes the digital technology side of his department will eventually become more important than the robotics side — despite the attention currently being given to robotics.

Digital communications — which embraces satellites, electronic communication methods between computers, countries and communities, and other related technologies — will create a heavy demand for retraining, he says.

"One senior management person in Telecom said to me that engineers over the age of 35 all need retraining — it is moving so fast," Dr Oh says.

"The whole telephone system, satellites, television, inter-office communication and related developments are changing everything. It won't be too long, for example, before you can order your groceries from home using a computer.

"I think the office revolution will have by far the greatest impact on employment — more in the long run than robotics."

Dr Oh says it is important for unions, politicians, bureaucrats, management and people at large to agree on ways to cope with the changes.

"Even for journalists it is changing — sub-editors on newspapers for example. Before long you will need only one to do the work of three in the past. Computers can check spelling, grammar and that type of thing."

Dr Oh believes Australia should develop a "knowledge industry" to support people displaced from other industries.

A weakening of the Protestant work ethic and retraining of people for new areas will reduce the worst effects of the massive industrial changes currently under way," Dr Oh says.

In the digital technology field, Chisholm is introducing a Bachelor of Digital Technology. One of the problems in planning for such a course is the rapid rate of change and the element of "crystal ball gazing" required to predict future demand.

"The toughest thing in education is to forecast whether you are going to meet the needs of the outside world, particularly in areas where technology is rapidly changing. We intend to take students for the digital technology degree in 1984; the first of them won't be out until 1987.

"Educational institutions tend to react to demands in society rather than try to predict the future. But it's got to be done in this area.

"By the nature and complexity of the education system, courses are slow to get underway. By the time a course begins, it can already be outdated. What I have tried to do is develop something to meet the demands of 1987. The technology is already there — it's a matter of phasing the introduction."

Dr Oh says "market demand" for people skilled in designing and maintaining office systems will be great within a few years.

One problem Dr Oh faces is persuading parents and potential students that they need to plan careers according to the demands of tomorrow — not according to the situation in 1983.

"No person in future is likely to acquire a set of skills they can use throughout their lifetime. So an ideal course should look at the type of skills needed immediately and at the same time there should be enough basic training so that students have a solid basis, and the intellectual discipline to carry on learning."

Beyond the immediate practicalities, another vital element of courses is that they should "help students to look at things creatively and create the environment for the pursuit of living," he says.

Dr Oh says he takes "an entrepreneural attitude". It is no good developing a good course if you don't get the right sort of people in it. You have to get out there and market the programme too."

The school's dean, Dr Trevor Pearcey, shares Dr Oh's enthusiasm for digital technology.

"Australian industry is in a poor position. The objective is to improve efficiency, even if it costs jobs, because at the rate we are going there won't be any jobs left at all."

Dr Pearcey echoes Dr Oh's comment on the work ethic. "We have to find other ways to make people feel they are useful to society — it is an important psychological need."

He predicts five to 10 years of instability before Australian industry "settles down".

But he concludes on a grim note. "Unemployment is increasing for reasons other than technology, and an induction of technology may reduce that. But it will never get things back the way they were."

CSO: 5500/7543

INDUSTRY GROUP REPORT CRITICIZES NEGLECT OF TECHNOLOGY

Sydney THE SYDNEY MORNING HERALD in English 5 Feb 83 p 6

[Article by Richard Eckersley]

[Text]

Australians still have a "cargo cult" mentality about technology, regarding it as something that is imported and grafted to their needs, a new industry association report says.

The report strongly criticises governments and industry for their neglect of research and development and new and high technologies, using terms such as woeful, pitiful and almost laughable to describe the present situation.

It says that unless there are significant changes in attitudes and activities in Australia, "our standard of living will fall inexorably as the years roll by."

"We cannot continue to maintain, let alone improve, our standard of living by doing what we have been doing during the past two decades."

The report, still in draft form, has been prepared by a committee of the Australian Scientific Industry Association, a body formed four years ago to enhance the transfer of information and technology between higher education institutions, industry and governments.

Its members include industry representatives, mainly from makers of scientific instruments, and government and academic scientists.

The report reflects a growing concern in political, government, academic and industrial circles that, technologically, Australia is slipping further behind other industrialised countries, and that this backwardness will jeopardise its economic recovery.

The report includes data which shows Australia's economic performance falls "way below" comparable European nations.

"It seems absurd that Sweden, a country of 8.5 million people, living on a virtual rock compared with our natural resources, can supply from 30,000 km away 25 per cent of the artificial kidneys used in this country, have a significant impact on our telecommunications industry (Leif-Ericsson) as well as supply significant amounts of fine chemicals (Pharmacia), instruments (LKB) and thousands of motor vehicles and trucks (Volvo and Saab).

"By comparison we supply them nothing.

"The same is also true of the Netherlands, with 14 million people living in a virtual swamp. Our electrical industry is dominated by Philips, the oil industry by Royal Dutch Shell and the detergent and allied industries by Unilever."

The report says Australia's overall research and development expenditure is too small, its priorities are askew, and the innovative capabilities of small high-technology companies are not being nurtured.

It makes 15 recommendations "to start Australia's industrial ball rolling in the right direction." They include:

- Venture capital invested in bona fide high or new technology-based industries and research and development expenditure by emerging high or new technology-based companies should be tax deductibe at a rate of 150 per cent.
- University research and development funding through the Australian Research Grants Scheme should be immediately increased from $20 million to $50 million.
- The budget for industrial research and development grants should be doubled to $100 million.
- Tariffs, import quotas and the like which are used to prop up inefficient low-technology and low-growth industries should be abolished over a 10-year period to be replaced, where appropriate, by subsidy payments to purchasers of Australian products.

CSO: 5500/7545

AUSTRALIA

SWEDISH FIRM BUYS THREE OF WICAT'S NEW S200 SYSTEMS

Melbourne THE AGE in English 8 Feb 83 p 33

[Article by Don Maddocks]

[Text]

Wicat Australia has hit its stride early in the year with a contract for three of its new S200 systems being sold to the big Swedish insurance group, Skandia.

The contract, worth $200,000-plus, includes 25 terminals, said Wicat's product support manager, Dr Vance Gledhill.

"Skandia's system provides a complete network, with a terminal on each desk," he said.

"Two of the S200s it has taken have 2M-bytes of main memory, and 80M-bytes of disk storage. The third will be dedicated to database use, with 4M-bytes of main memory and 474M-bytes of disk."

Wicat's new S200 systems are an improvement on its older, S100 machine, which has been dropped.

Dr Gledhill said the S200 was about 1½ times faster than the old machine. Since the S200 was launched in Australia about the end of December, Wicat has sold seven systems, including three to the CSIRO's division of computing in Canberra.

Delivery of the new machines, which are totally re-engineered, is about 30 days, said Dr Gledhill. The price of the S200 systems varies from an entry price of around $45,000, right up to $170,000.

The entry level price includes half a megabyte of memory and 40M of disk drive, with back-up cartridge tape. A $170,000 system comes with 25 terminals, 4M of memory and 1500Ms of disk storage.

Commenting on Skandia's new S200s, the company's regional manager, Mr Stan Hardie, said: "Their speed of response is excellent."

Mr Hardie said Skandia had traditionally been a mainframe user, but had recently embarked on a policy which could lead to it using distributed processing world-wide.

CSO: 5500/7545

PRIVATE SECTOR ROLE IN TELECOM BECOMES ELECTION ISSUE

Sydney THE SYDNEY MORNING HERALD in English 9 Feb 83 p 3

[Article by Paul Kelly]

[Text] BRISBANE. — Federal Cabinet yesterday endorsed in principle more private sector participation in Australia's telecommunications industry.

The Minister for Communications, Mr Brown, will announce in Melbourne today the Government's initial response to the Davidson report on the economics and structure of the telecommunications sector.

Some of the Davidson recommendations, such as payment for local phone called based on the length of the call, have been rejected.

The Government will reportedly steer a middle course between support for public services, such as Telcom, and at the same time indicating its preference for a far bigger role for the private sector.

Richard McGregor reports from Canberra that the Opposition spokesman on communications Senator Button, says a Labor government woud maintain Telcom's monopoly and its cross-subsidisation policy for rural subscribers.

Senator Button said changes to Telecom recommended in the Davidson report "would undermine and destroy the Australian telecommunications system, cause steep cost increases, and unemployment in vital parts of the industry."

Senator Button rejected the proposal for times local calls, and also said that Telecom must continue to buy 85 per cent Australian equipment.

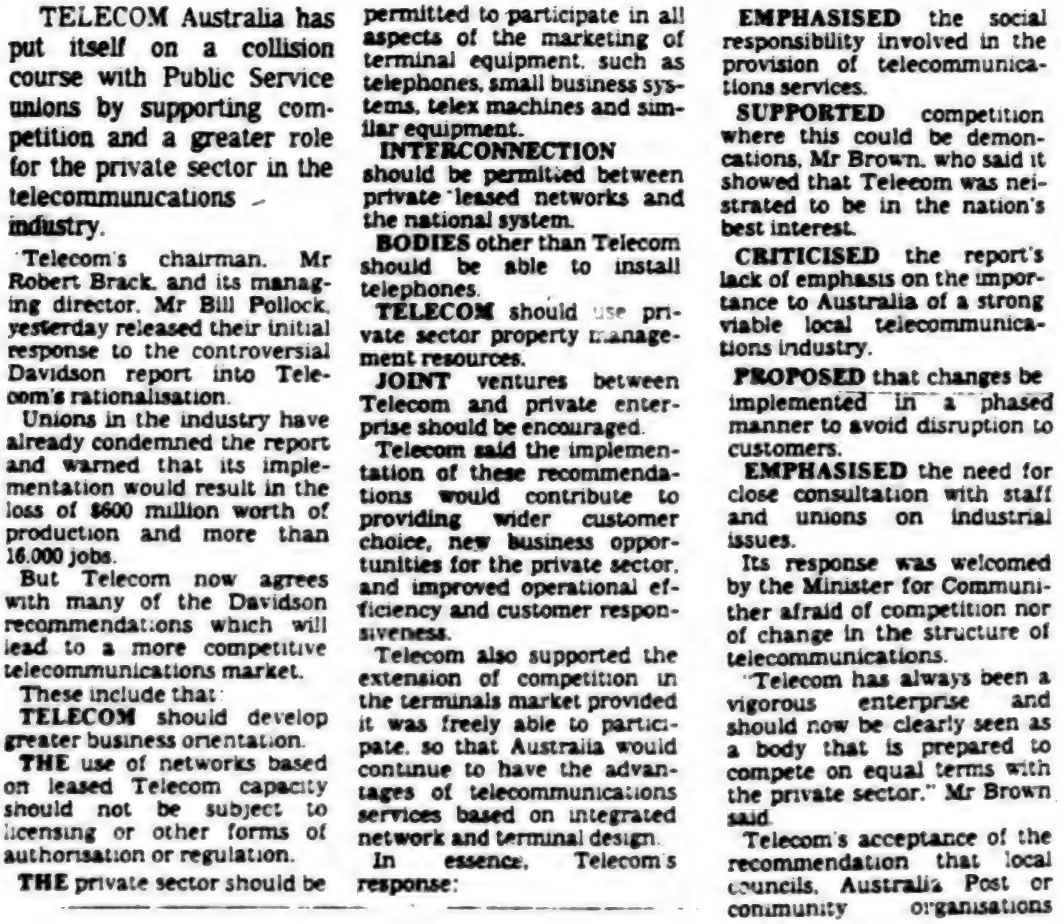
Mr Brown has supported the report's recommendations, and his keenness to push ahead with its implementation could turn the area into an election issue.

CSO: 5500/7545

TELECOM AGREES WITH CALLS FOR GREATER PRIVATE SECTOR ROLE

Canberra THE AUSTRALIAN in English 28 Jan 83 p 2

[Article by Wio Joustra]



[Text] TELECOM Australia has put itself on a collision course with Public Service unions by supporting competition and a greater role for the private sector in the telecommunications industry.

Telecom's chairman, Mr Robert Brack, and its managing director, Mr Bill Pollock, yesterday released their initial response to the controversial Davidson report into Telecom's rationalisation.

Unions in the industry have already condemned the report and warned that its implementation would result in the loss of $600 million worth of production and more than 16,000 jobs.

But Telecom now agrees with many of the Davidson recommendations which will lead to a more competitive telecommunications market.

These include that:

TELECOM should develop greater business orientation.

THE use of networks based on leased Telecom capacity should not be subject to licensing or other forms of authorisation or regulation.

THE private sector should be permitted to participate in all aspects of the marketing of terminal equipment, such as telephones, small business systems, telex machines and similar equipment.

INTERCONNECTION should be permitted between private leased networks and the national system.

BODIES other than Telecom should be able to install telephones.

TELECOM should use private sector property management resources.

JOINT ventures between Telecom and private enterprise should be encouraged.

Telecom said the implementation of these recommendations would contribute to providing wider customer choice, new business opportunities for the private sector, and improved operational efficiency and customer responsiveness.

Telecom also supported the extension of competition in the terminals market provided it was freely able to participate, so that Australia would continue to have the advantages of telecommunications services based on integrated network and terminal design.

In essence, Telecom's response:

EMPHASISED the social responsibility involved in the provision of telecommunications services.

SUPPORTED competition where this could be demoncations, Mr Brown, who said it showed that Telecom was neistrated to be in the nation's best interest.

CRITICISED the report's lack of emphasis on the importance to Australia of a strong viable local telecommunications industry.

PROPOSED that changes be implemented in a phased manner to avoid disruption to customers.

EMPHASISED the need for close consultation with staff and unions on industrial issues.

Its response was welcomed by the Minister for Communither afraid of competition nor of change in the structure of telecommunications.

"Telecom has always been a vigorous enterprise and should now be clearly seen as a body that is prepared to compete on equal terms with the private sector," Mr Brown said.

Telecom's acceptance of the recommendation that local councils, Australia Post or community organisations should be free to provide public telephone services could well lead to a great increase in the provision of telephones in places where local people felt they were needed.

Telecom's acceptance of the recommendations that Redphones should be part of the open terminal market and hence subject to competition and should be available on a sale or lease basis could lead to healthy competition in this part of the market.

Mr Brown said one of the major areas of controversy arising from the report was that concerning private communications networks that could be set up on lines leased from Telecom.

The Davidson committee recommended that the use of those networks should not be subject to licensing or other forms of authorisation or regulation.

Telecom agreed with this recommendation and considered that the only regulation or authorisation should be an embargo on leased networks offering common carrier services.

Mr Brown said the Davidson proposal could provide great scope for the development of private networks and Telecom's general agreement with the proposal was welcomed.

Telecom's response would receive careful consideration by the Government which had received more than 1500 representations on the report since it was published.

"Many of these have expressed concern over the Davidson recommendations on pricing – particularly the introduction of timed local calls and the proposal to move away from subsidising remote and rural subscribers," Mr Brown said.

CSO: 5500/7543

CSIRO SYSTEM TO USE FASTEST, MOST POWERFUL COMPUTER

Canberra THE AUSTRALIAN in English 18 Jan 83 p 21

[Text] **AUSTRALIA'S largest computer network, CSIRO's Csironet, is to install one of the world's fastest and most powerful computers.**

Announcing the acquisition of an $8 million Control Data Cyber 205, the Minister for Science and Technology, Mr David Thomson, said it had been offered to CSIRO by Control Data Australia as part of an agreement made in 1979 between the two organisations.

"The Cyber 205 represents a significant advance in computing power for CSIRO and Australia," he said.

"No similar computer is presently installed in the southern hemisphere, and only a few are installed outside the United States.

"It will be accessible nationally, even internationally, through Csironet."

He said particular scientific benefits would cover areas as diverse as mineral exploration, oil reservoir simulation, satellite image processing, climate studies, oceanographic studies, quantum chemical studies, determination of protein structures, and the simulation of VLSI circuit designs.

Mr Thomson said the Cyber 205 would be installed at the CSIRO's division of computing research in Canberra and commissioned early next year.

The CSIRO machine has 16 million bytes of main memory and is upgradable to 64 million bytes.

Virtual memory is implemented using a 48-bit address.

The central processing unit comprises one scalar processor and two pipelined vector processors, and is upgradable to four vector pipelines.

With two pipelines the central processor is capable of carrying out more than 400 million additions or multiplications in a second.

A similar amount of computing would require about 100 seconds on Csironet's current Cyber 76 computer, which remains one of the fastest computers in Australia almost 10 years after installation.

CSIRO will lease the Cyber 205 for an initial seven-year period.

The chief of CSIRO's division of computing research, Dr Peter Claringbold, said Australia must have adequate access to the most advanced computing facilities if it were to compete with other technologically advanced countries.

"There is almost no field of human endeavour these days that is not affected in some way by computing services," he said.

"The acquisition of a supercomputer is, therefore, not so much a matter of national pride but of national necessity.

"It will enable problems to be tackled that previously have been beyond our reach."

He said the Cyber 205 would help maintain CSIRO's position as one of the world's leading research institutions.

"The stimulus this supercomputer will provide for creative thought among Australian scientists is a very exciting prospect."

Managing director of Control Data Australia, Mr Charles Copenhaver, said: "Australia will be the first nation in the southern hemisphere, and the first outside the US, the UK and Western Europe, to install a computer system of this power and capability.

"Neither the USSR nor Japan has a computer capable of matching the performance of the Cyber 205."

CSO: 5500/7542

AUSTPAC DATA SERVICE DELAYED; TWO CONNECTIONS ON LINE

Melbourne THE AGE in English 18 Jan 83 p 24

[Text] Telecom's Austpac data service has been delayed, with only a few customers expected to be offered the service in the first six months of this year.

So far only two customers are known to have been linked to the system, and both are companies developing equipment for use with Austpac.

The first customers, Honeywell and Digital Equipment, have been linked to packet switching "nodes" in Sydney and Melbourne.

Large companies expecting the data switching service to be in operation by now are likely to be irritated by the delay.

Undeterred, Telecom announced the connection of the first two customers last week, parising the even as "a major milestone in the establishment of a new infrastructure for advanced data communications in Australia".

The manager of Telecom's data division, Mr Neil Crane, said: "The service as it develops will provide opportunities for the development of a range of emerging applications.

"The staged development and expansion of this service represents a major engineering effort by Telecom involving planned upgrades to existing hardware and software, and expansion to include switching nodes in the six major capital cities in the latter part of 1984.

"At the end of this phase of development the service available will be capable of handling all major packet switching applications."

He conceded that the Austpac service offered a limited range of facilities now and could not support many users.

More customers will be added progressively from February as the system's capacity is expanded. Telecom plans to keep customers informed of progress through its Austpac user group.

Customers planning major applications have been advised to discuss their ideas with Telecom to ensure that facilities are available to carry out their plans.

A Telecom spokesman said the main concerns over Austpac were the system's capability and network management. The packet switching facilities were working well.

"We think new versions of hardware and software will improve the situation," he said.

He said Telecom was working with its major contractor, the French group SESA, to improve the position.

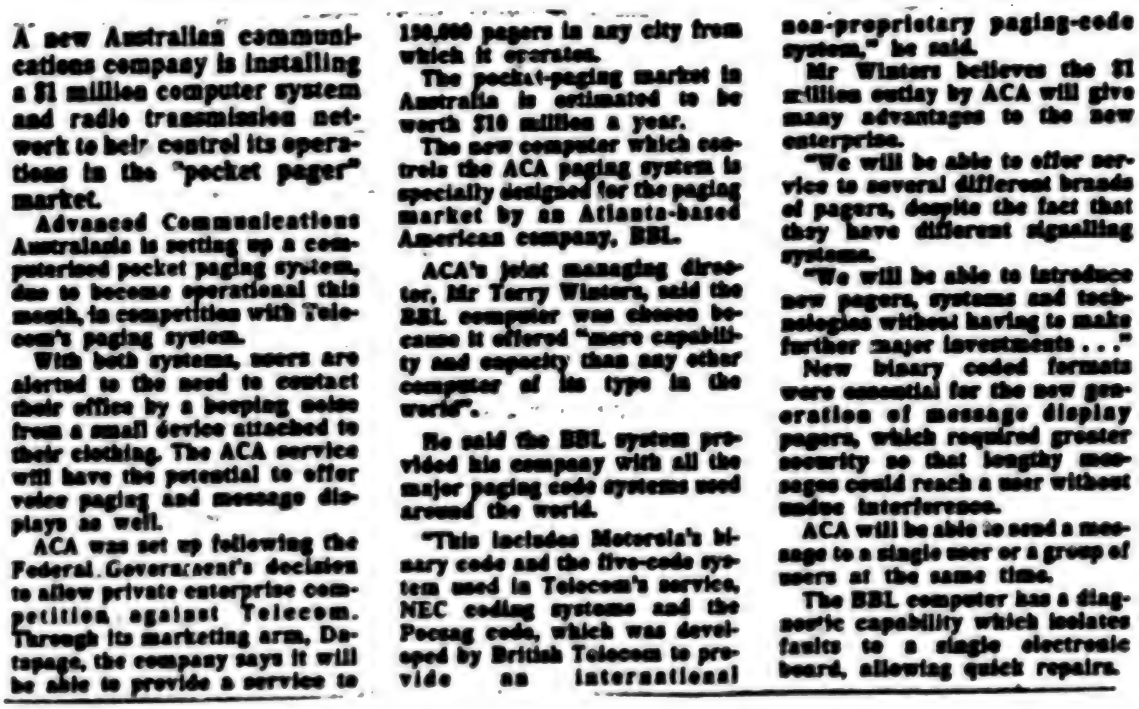
"We're determined to get it going as quickly as possible," he said, bu Telecom would not put customers on if it meant giving them problems.

CSO: 5500/7542

COMPUTER, COMMUNICATIONS NET USED IN PAGING SYSTEM

Melbourne THE AGE in English 1 Feb 83 p 30

[Text]



A new Australian communications company is installing a $1 million computer system and radio transmission network to help control its operations in the "pocket pager" market.

Advanced Communications Australasia is setting up a computerised pocket paging system, due to become operational this month, in competition with Telecom's paging system.

With both systems, users are alerted to the need to contact their office by a beeping noise from a small device attached to their clothing. The ACA service will have the potential to offer voice paging and message displays as well.

ACA was set up following the Federal Government's decision to allow private enterprise competition against Telecom. Through its marketing arm, Datapage, the company says it will be able to provide a service to 150,000 pagers in any city from which it operates.

The pocket-paging market in Australia is estimated to be worth $10 million a year.

The new computer which controls the ACA paging system is specially designed for the paging market by an Atlanta-based American company, BBL.

ACA's joint managing director, Mr Terry Winters, said the BBL computer was chosen because it offered "more capability and capacity than any other computer of its type in the world".

He said the BBL system provided his company with all the major paging code systems used around the world.

"This includes Motorola's binary code and the five-code system used in Telecom's service, NEC coding systems and the Pocsag code, which was developed by British Telecom to provide an international non-proprietary paging-code system," he said.

Mr Winters believes the $1 million outlay by ACA will give many advantages to the new enterprise.

"We will be able to offer service to several different brands of pagers, despite the fact that they have different signalling systems.

"We will be able to introduce new pagers, systems and technologies without having to make further major investments . . ."

New binary coded formats were essential for the new generation of message display pagers, which required greater security so that lengthy messages could reach a user without undue interference.

ACA will be able to send a message to a single user or a group of users at the same time.

The BBL computer has a diagnostic capability which isolates faults to a single electronic board, allowing quick repairs.

CSO: 5500/7543

BRIEFS

SATELLITE PHONE CHANNELS—Telephone channels to the UK, Europe, Africa and Asia will be increased by nearly 300 per cent under plans announced by the Overseas Telecommunications Commission yesterday. The channels or circuits, which will also be used for telex, fascimiles, and communications between computers, are to be increased from 1,200 to about 3,400 on the Intelsat V satellite over the Indian Ocean. The Minister for Communications, Mr Brown, said yesterday the Federal Government had approved the purchase of new transmission equipment worth about $1 million. The total cost of the upgrading of the satellite will be $2.4 million. The increased capacity of Intelsat V reflects the increase in telecommunications activity in Australia, which a spokesman for OTC said, was increasing at a rate of about 30 per cent a year. The new equipment will be in operation by October, 1984, at OTC's base at Ceduna. [Text] [Sydney THE SYDNEY MORNING HERALD in English 3 Feb 83 p 10]

OVERSEAS WORD PROCESSING NET—One of the country's largest management and technical consultancies, PA-Australia is to be linked with its UK parent's headquarters by a sophisticated word processing and computer system. The system, a Wang VS 100 computer sited in London, is part of a project to automate PA's world-wide network of 78 offices. PA Australia, based in Melbourne and with offices in all capital cities, hopes to place orders for the Wang equipment early this year. The new system will provide distributed word processing for the London base and manage the operation of Wang's electronic mail system, Mailway, between 16 unit headquarters across four continents. PA also plans to use Wang's Alliance system to develop a worldwide information retrieval network communicating via Mailway. Announcing the introduction of the new system, PA Australia's chief executive, Mr Peter Merigan, said: "As a strong advocate of the benefits of advanced office technology to its clients, PA expects this program to make its own organisation more productive and cost effective." [Text] [Canberra THE AUSTRALIAN in English 8 Feb 83 p 23]

SATELLITE TV BOOST—Canberra—Multicultural television will be relayed to centres other than Sydney and Melbourne by satellite, beginning later this year. The Minister for Communications, Mr Neil Brown, said yesterday that the Intelsat IVA satellite would be used to relay the programs currently broadcast in Sydney and Melbourne on Channel 0/28. The Government already has decided to extend the services to Canberra, Goulburn and Cooma this year, to Newcastle, Wollongong, Adelaide and Brisbane in 1983/84 and to Hobart, Perth and Darwin in 1984/85. Intelsat will be used until the Australian satellite system, Aussat, comes on stream in 1985. It was originally planned to distribute the service by means of Telecom standby bearers, but Mr Brown said there was now some doubt as to whether those bearers would be available. The best way to ensure the original timetable was met was to put the service on the satellite. The service could be made available without committing additional Government funds. [Text] [Sydney THE SYDNEY MORNING HERALD in English 8 Feb 83 p 9]

SATELLITE EARTH STATIONS—Telecom is planning a telecommunications network of earth stations to link with Australia's national communications satellite system, due for inauguration in 1985. The Minister for Communications, Mr Neil Brown, said yesterday he had approved a Telecom contract with NEC Australia Pty Ltd for a telephone ground system valued at $7.8 million. The equipment would be used to provide satellite telephone services for Australia. "The equipment is required to establish satellite-based telephone network access to subscribers in remote areas of Australia," Mr Brown said. "Telecom, in other words, will be using the satellite system to meet the needs of its customers, particularly in remote areas." The system would be one of the most advanced in the world and consist of a central control facility and 65 earth stations. It would provide a completely automatic telecommunications. "Sixty of the earth stations will range in capability from a single channel service for a remote homstead to up to 12 channel services for remote communities such as mining towns," Mr Brown said. Actual sites had still to be decided. [Text] [Canberra THE AUSTRALIAN in English 9 Feb 83 p 5]

DATA TRANSFER DEVICE--A DEVICE that enables data transfer between processors and tape drives at full channel speeds of up to three megabytes per second has been announced by Storage Technology of Australia for use with its 3600 series of tape subsystems. "The new model 4800 tape accelerator eliminates the throughput bottleneck created when newer IBM and compatible processors with their higher speed channels are used with tape subsystems optimised to earlier CPU channel speeds," said Mr John Kitchen, systems engineering manager of Storage Technology. The device was externally attached to the Storage Technology 3800-IV tape control unit and did not require any software modifications, he said. With an accelerator one tape drive could keep a channel 100 per cent occupied and it was now possible to have two, three or even four tape drives continually active from that same single channel. [Canberra THE AUSTRALIAN in English 18 Jan 83 p 22]

HONEYWELL ORDER BY TELECOM--TELECOM has placed an $8 million order with Honeywell for six DPS 8/70 mainframe computers. The machines will be used to extend the services provided by existing systems and to develop new applications. Two of the new computers will be located in Sydney and four in Mel-Melbourne. Telecom said the aim was to improve customer services, especially in the areas of fault reporting and stock recording. [Canberra THE AUSTRALIAN in English 18 Jan 83 p 15]

MOBILE PHONE NETWORK--TELECOM is to expand its automatic mobile telephone network in Sydney and Melbourne and extend it to Brisbane, Adelaide and Perth. Announcing this yesterday, the Minister for Communications, Mr Brown, said that he had approved a Telecom contract for $18.5 million to be placed with NEC Australia of Mulgrave, Victoria. The contract involved the delivery this year of base station equipment for each of the capital cities. It also included the supply of mobile equipment to be installed in motor vehicles and marine craft after the base stations are installed. This would allow for expansion in Sydney and Melbourne. The Brisbane, Adelaide and Perth services would begin in 1984 and 1985. The contract would provide continuing employment for 60 people engaged in manufacturing the mobile units at Mulgrave and support up to 20 people for 12 months for work on the base station equipment. [Canberra THE AUSTRALIAN in English 21 Jan 83 p 3]

AUSTPAC CAPACITY ENLARGEMENT--CANBERRA--Telecom will be able to double the capacity of its AUSTPAC packet switched data network under a new $6.5 million contract the Federal Communications Minister, Mr Brown, announced yesterday. The contract will allow the establishment of extra switching centres in Brisbane, Adelaide, Perth and Canberra towards the end of next year. [Brisbane THE COURIER-MAIL in English 19 Jan 83 p 3]

NSW HIGH-TECH STUDY--THE NSW Government has announced it will fund a major study to identify specific commercial high technology opportunities for the State. According to the Department of Industrial Development and Decentralisation, this, along with other studies into robotics and micro-electronics, is the first of a number of initiatives by the State Government in the high technology field. [Excerpt] [Canberra THE AUSTRALIAN in English 20 Jan 83 p 3]

CSO: 5500/7542

BRIEFS

PALAPA SERVICES TO SINGAPORE—The Singapore Telecom Service announced on 15 March that it will start telecommunications services between Singapore and the Indonesian cities of Pakanbaru, Pontianak and Samarinda through Palapa Satellite beginning in August 1983. The Singapore Telecom Service is also considering possible expansion of the network to other Indonesian towns. [Text] [Jakarta Domestic Service in Indonesian 1200 GMT 15 Mar 83 BK]

CSO: 5500/4340

FUTURE DEVELOPMENT OF TELECOMMUNICATIONS DISCUSSED

Sofia VECHERNI NOVINI in Bulgarian 19 Feb 83 p 4

[Article by Vera Pavlova: "Modern Telecommunication System--New Developments at Scientific Research Institute for Communications--Goal to Achieve World-Class Breakthroughs"; passages enclosed in slantlines printed in boldface]

[Text] What will the future development of our national telecommunication system be? To what extent will communication traffic grow in accordance with the economic development of individual regions of the country? What sort of material and technical base is needed in order to provide /a wide range of communication and information services/ for the needs of the national economy and the population? These are some of the problems that the staff of NIIS [Nauchnoizsledovatelski Institut po Suobshteniyata; Scientific Research Institute for Communications] is studying. A team of specialists of the institute and the Directorate for Long-Term Development and Scientific Servicing of Communication Networks and Systems in the ministry is now intensively updating the program for the development of communications up to the year 2000 for the purpose of improving the material and technical base and bringing about preconditions for the building of a communication system with integration of services. Modern methods are being introduced not only in network and systems planning, but also in development strategy, with optimum utilization of investments sought. This is a large-scale task which necessitates /automation of engineering labor/.

With the help of electronic computer equipment, data are being summarized and plans prepared for the future development of our national telecommunication system.

Efforts are also being directed towards the development of a backup system for the telephone network using microprocessor equipment that will automatically register faults and give a diagnosis not only of the subscriber lines and networks but also of conurbation and interconurbation trunk lines. The results will be fed into control centers at several levels. This will make it possible to compile /precise statistics on the number of faults and the time it takes to eliminate them/.

Also impending is a study of a normative basis for technical operation, of parameter level, frequency and organization of preventive maintenance and the technological process for the implementation of telephone traffic.

Another area on which NIIS's scientific and technical thinking is being focused is the improvement of the national data-transmission network with our own hardware and its integration with the networks of the CEMA-member countries. This will assure all users access to the computer resources and information centers of these countries. The "Sintes," "Efir" and "Bultekst" systems, devised at the institute, will be used and further developed as the basis for constructing national and departmental information systems. Information will be transmitted via telephone and telegraph networks.

The effort to develop projects which save the national economy foreign exchange is impressive. In telegraphy a /medium-speed multiplexer/ will be introduced in place of the multiplexing telegraphic devices hitherto used. Jointly with the communications industrial repair enterprise in Ruse, work is being done on a new USW transmitter design. Close contacts are maintained with the Communication Industry Institute and the Radioelectronics Institute. Experiments will be conducted on our first M-1000 microprocessor exchange, which is suitable for rural regions. Research has been intensified in the field of analog multiplex systems, attention already being focused on digital systems. Work is under way on a data-transmission design with package switching, which method will appreciably decrease transfer time. The introduction of modern forms of documentary traffic (black-and-white and color facsimile telegraphy) is envisaged. This is just a small portion of the problems by solving which today the NIIS specialists are sketching the contours of the future development of the national communication system.

/The automation of operational processes/ is also a question that excites the engineering thought of the institute and gives direction to its creative research. The goal is to raise the standards of service and lighten the labor of communication workers. Experiments are under way on the container shipment of newspapers and periodicals to shunting and exchange junctions. Science Associates Dimitur Tatarski, Sotir Shamandura and Yanko Rendenkov are working on this question. This new form of materials-handling and transportation activity will reduce the number of people employed in manual and uncongenial work, shorten the handling time for packages and bundles of dailies and periodicals, and prevent the tearing and smearing of individual copies.

This year the introduction of /automatic communication monitoring equipment/ on a mass scale at all dial telephone exchanges is being successfully continued. Through it, losses from technical malfunctions are being reduced and fault elimination time is being cut four- or fivefold. The originators of this project, Science Associates Dimitur Nonchev, Georgi Grebenarov and Rumyana Buykikeva, are actively helping the personnel of Telekomplekt ISO [Engineering Economic Organization] install and operate it. At the moment tests are being conducted under the direction of Science Associate Petur Brunekov on the MARTI-200 microprocessor instrumentation, developed jointly by NIIS and the Lenin VMEI [Higher Machine-Electrical Institute] for the centralized billing of telephone calls. A technique is being successfully introduced for automatically monitoring cables with compressed air, which is a prerequisite for appreciably raising the reliability of conurbation cable networks.

"The institute's new program will comprehensively cover the problems of the national communication system and will provide for every detail," institute director Engineer Ana Gotseva assures us. "Underlying everything is the desire to raise the quality and standards of communication services, to put production capacities under maximum workload and, not least, to forecast the future development of telecommunications in Bulgaria."

What strikes one is that for NIIS the integration of science and production is realized to be a necessity. It will help scientists check in practice the value of their research and get it accepted more rapidly in production. Thus the staff will make their contribution to solution of the cardinal question--the intensification of communications through the accelerated introduction of scientific and technical achievements and progressive experience.

6474
CSO: 5500/3010

BRIEFS

TELEVISION TOWER AT RUSE--One of the most important (and most difficult to accomplish) projects during the Eighth Five-Year Plan for the personnel of the Transstroy SP [Economic Enterprise] in Ruse is the television tower which is rising near the beautiful Leventa region. It is the tallest (over 200 m with the antenna carrier) not only in Bulgaria but in the Balkans as well. The Transstroy workers take genuine pride that up to 120 m they built it centimeter by centimeter, element by element, filling the insatiable forms with hundreds and thousands of tons of cement. Here for the first time a gigantic crane is being used that can operate at a height of 160 m. The man running it, Petko Stankov, quickly masters the details of working with it and then, lifted high in the metal cab, easily conveys the structural elements from the ground, placing them exactly in their appointed places. The distinguished master workmen--Iliya Rangelov, Dimitur Rusinov and Yani Rangelov--deserve credit for the rapid and high-quality completion of the construction work on this unique installation. "We've been at this construction site from the first days," says Il. Rangelov, "and we'll be the last to leave. There's not much left till it's finished. The aluminum joinery has to be put in place, the elevators installed, and the coffee and pastry shop at the 90th meter of the tower equipped. We want to be among the first to have coffee up there and then say goodby to the project." On completion of the tower the quality of television transmissions will be significantly improved for the inhabitants of the conurbations of Northern Bulgaria. [By Sl. Dinev] [Text] [Sofia ZEMEDELSKO ZNAME in Bulgarian 3 Mar 83 p 3] 6474

CSO: 5500/3010

SATELLITE TELECONFERENCING LINKS CARIBBEAN UWI CAMPUSES

Kingstown THE VINCENTIAN in English 4 Feb 83 p 3

[Text] A monthly features service about science, technology, and development,

Science - World.

A new satellite-based audio teleconferencing system now being installed at the University of the West Indies (UWI) will expand UWI's ability to provide education, agricultural extension and other development-related services to its campuses and extension centres throughout the island nations of the Caribbean.,

The teleconferencing system will initially link UWI's three main campuses - Mona. Jamaica; Cave Hill, Barbados; St Augustine, Trinidad ;- with extension centres in St. Lucia and Dominica. First year students will no longer have to move to the campus, instead the courses will be brought to a central location in each of the areas involved in the pilot project. Each location will have a teleconferencing room for 20-30 people, equipped with a voice circuit, speaker system, microphones, and other equipment.,

The system, which should be operational in 1983, will be completely interactive; students, tutors and instructors at any of the people at all of the other classroom sites. It will also make agricultural information more easily available to some of the less-developed islands in the region.

Supported by the Agency for International Development., the UWI pilot project is one of several being planned to explore the useof satellite technologies to provide communications to meet the social and economic needs of the developing world.,

CSO: 5500/7541

BRIEFS

RADIO STATION IN ARICA--The new, modern equipment of the Arica station of Radio Nacional Chile, was inaugurated on 14 March. The new equipment includes a 70-meter antenna with a power of 10,000 watts. [Santiago Domestic Service in Spanish 1730 GMT 15 Mar 83 PY]

CSO: 5500/2051

BRIEFS

HONDURAN-VENEZUELAN TELEPHONE LINK--Telephone communications between Honduras and Venezuela were officially established last Wednesday, the Venezuelan embassy in Tegucigalpa reported yesterday. This modern telephone system permits quick and direct communications between the two countries. [PA241215 Tegucigalpa LA TRIBUNA in Spanish 22 Mar 83 p 32 PA]

CSO: 5500/2048

TELECOMMUNICATIONS PROJECTS FOR 1983 DESCRIBED

Managua EL NUEVO DIARIO in Spanish 10 Feb 83 pp 1, 12

[Text] This year, as part of the progress with which it will celebrate World Communications Year, TELCOR [Nicaragua Telecommunications and Postal Service Institute] will conclude a series of projects, including the inauguration of automatic telephone and postal services between Matagalpa and Puerto Cabezas and the creation of a Center for Telecommunications Studies that will cost 40 million cordobas.

The foregoing was announced yesterday by Captain Enrique Schmidt, TELCOR minister director, and he also announced the formation of the National Communications Coordinating Committee under Dr Rafael Cordova Rivas, member of the governing junta.

Postal service between Matagalpa and Puerto Cabezas will be inaugurated this month with radio-equipped vehicles that will sell postage stamps, stationary and envelopes. They will cover a distance of 420 km, providing service to some 12 towns along the way.

Automatic telephones will be established in Puerto Cabezas on the 25th of this month and it is expected that they will be connected with Matagalpa during the course of the year.

To date, communications under this project exist between Matagalpa and Waslala.

In April of this year, a postal museum will be opened in the TELCOR building in the city of Granada. There the history of telecommunications in Nicaragua will be reconstructed. It will feature old telecommunications equipment used in the country.

In May, the TELCOR Center for Telecommunications Studies will begin operations in Villa Panama. It will fill a basic gap in Nicaragua's communications technology, as it will train branch technicians who will allow the country to free itself gradually from the existing technological dependence.

The telecommunications system with automatic telephones between Matagalpa and Puerto Cabezas will also be inaugurated in May of this year. The cost of the project is 36 million cordobas.

In the same month, TELCOR telephone service will begin in Leon and in July there will be an exhibition of Nicaraguan postage stamps from before and after the revolution.

Shown on that occasion will be gold postage stamps that the Somoza dictatorship did not have time to put on the market.

On 7 October, the 23rd Convention of Central American and Panamanian Radio Amateurs will take place. Between 500 and 600 delegates will attend.

Captain Schmidt reported that within the revolution's concept that telecommunications should be an instrument of peace, to battle against ignorance, hunger and underdevelopment, TELCOR has the goal that no town in the country with more than 300 inhabitants should lack telecommunications.

Among those projects, he indicated those of Nacimi, Las Sabanitas, La Concepcion, San Ramon, Yali, San Rafael, La Concordia, La Paz Centro, Momotombito, Chinandega, Potosi, El Sauce, El Viejo and others.

He added that during the year the country will be visited by the telecommunications ministers of Sweden, Mexico, Afghanistan, Libya, GDR, and Cuba and by the secretary general of the International Telecommunications Union.

In regard to the Center for Telecommunications Studies, he reported that it will cost 4 million cordobas and that it will have five classrooms, as well as laboratories, dining rooms, etc., with a capacity of 180 students.

On the means of collecting in dollars at an exchange rate of 28 to 1 for international telephone calls, he explained that the government pays for those services in dollars and therefore should be reimbursed for part of those costs.

He pointed out that TELCOR is a self-sufficient institution independent of the national budget. "It is," he said, "a solvent state enterprise that is self-supporting."

Referring to the delay, he said that it has been reduced considerably because now more than 90 percent of the billed amount is collected.

He added that for some persons who are paid at the end of the month, the cut-off period will be extended to the 30th of each month instead of the 25th as has been the practice heretofore.

In regard to the institution's facilities, he said that they are far superior to those of the Somoza administration under directors such as Florencio Mendoza and Heberto Sanchez, who fattened their pocketbooks at the expense of the institution.

He said, for example, that during those administrations foreign loans were so onerous that at times the interest on them exceeded total capital.

He also said that recently TELCOR has less frequently been victimized by persons who, planning to leave the country, make a large number of telephone calls abroad and later do not pay for them.

Finally, he announced a loan of M 15 million from the GDR to amplify telephone installations, as in Esteli.

9746
CSO: 5500/2043

BRIEFS

TELEVISION STATIONS--Two new television stations, one in Lima and another in Tumbes will soon be in the air. The Lima station, Channel 13, will be powerful enough to reach Ica in the south and Pativilca in the north. The Tumbes station, Channel 11, will be able to reach Piura and the Ecuadorean border. [Lima EL COMERCIO in Spanish 24 Feb 83 p A16 PY]

NEW COMMUNICATIONS FACILITIES--Two ground stations and 11 relay stations will be installed in Cajamarca Department. Miguel Alva Orlandini, head of the National Mass Media Institute [Instituto Nacional de Comunicacion Social], outlined the scope of a state-owned television project at a departmental assembly of the Cajamarca Development Commission. Alva Orlandini announced that two ground stations will be installed to receive satellite television signals in Cajamarca and Jaen. He also said that 11 relay stations will be installed in the remaining provincial capitals to cover the entire department. Alva Orlandini added that the implementation of this project will require approximately 1.2 billion soles for equipment and 800 million soles for infrastructural facilities. He also reported that Cajamarca will also be the seat of another branch of Radio Nacional to be established with FRG's technical and economic cooperation. [Text] [PY311751 Lima Domestic Service in Spanish 1100 GMT 31 Mar 83]

CSO: 5500/2050

TRINIDAD AND TOBAGO

BRIEFS

TOBAGO PHONE SERVICE—Trinidad and Tobago Telephone Co. is trying to satisfy 90 per cent of the demands for new phones in Tobago by 1987. Telco officials, at a meeting with Tobago Chamber of Commerce, said the target was to provide one trunk line to every ten people in Tobago, to bring the service up to metropolitan standards. It was also learnt that consideration will be given, this year, for the provision of Telex services for businessmen. The Chamber had been asked to make recommendations for the upgrading of the service. [Text] [Port-of-Spain TRINIDAD GUARDIAN in English 7 Mar 83 p 3]

CSO: 5500/7544

MANY NEW TELECOMMUNICATIONS PROJECTS DESCRIBED

Kabul KABUL NEW TIMES in English 28 Feb 83 pp 1, 4

[Text]

KABUL, February 28 (Bakhtar)— For the first time, a channel system of telephones will be established between several provinces of the country.

In a detailed report on the postal and communication services, daily Haqiqate Enqlabe Saur, organ of the PDPA CC, writes that, with the victory of the Saur Revolution, the renovation and expansion of the country's communication services have been included in the Five-Year Plan and is specifically considered one of the economic duties in the Programe of Action of the People's Democratic Party of Afghanistan.

Here are some of the plans and achievements in this sphere, as enumereted in the paper:

The construction of the second telecommunications projects with a capacity of 700 telephone lines has begun.

Two buildings, one in Microroyan and the other in Khair Khana Mena, have been completed. The contract on purchase of the necessary equipments of the project including the installation of the project costing over DM 17.2 million has been concluded with the Siemens Company and the work on this project will be completed in 1362 HS (1983-1984).

The Mazar-Hairatan channel project has been completed and is ready for communications purposes. The channel station was provided by the Soviet Union for the Communications Ministry. This project ensures telephone and telegraph links with the Hairatan port through channel lines and an expansion of communications links between the DRA and the Soviet Union.

As many as 325 kms of telephone lines have been extended between Mazare Sharif, Maimana, Taluqan and Faizabad.

In the cities of Charekar, Puli Khumri, Sheberghan and Ghazni, automatic stations have been installed. A contract for the purchase of necessary equipments for these stations has been concluded with the Electronic Company of the German Democratic Republic. This project is financed from the credits of the GDR.

The Shamshad television station has been installed and is already working with a capacity of 12 communications channels and one colour TV channel with the possibility of expansion in the future. This station has been installed as part of the gratis aid of the Soviet Union.

In the Kabul city, the telex station with a capacity of 80 lines was not enough to meet the needs of the city. Therefore, it is planned to expand it by 20 more lines. The apparatus and equipments for this project will be purchased from the credits of Iraq.

Radio stations of the type CPB-7 have been installed with a view to broadcasting local programmes in the cities of Moqor, Qalat, Lashkargah and the district of Khost. It is planned that such stations will be built also in the cities of Zaranj and Farah by the end of the current year.

[illegible] long-wave radio station will soon start operations for the far-flung areas of the country. Financed by the Soviet Union, this station will broadcast radio programmes on medium waves of 1,000 kws.

The postal services have regestered a rising curve during the post-revolution period. The total income due to postal services in the post-revolutionary years amounted to over Afs 235 million, which is 91 per cent more than for the same period before the revolution.

The telecommunication services have also increased after the revolution. In 117 places, wireless stations have been installed and are functioning for inter-provincial communications.

From 1357 HS (1978-1979) till end of 1360 HS, the number of telephone sets have increased by five per cent.

The incomes of telecommunications from the beginning of the Saur Revolution up to the third quarter of 1361 HS have reached over Afs 1,171 million. This is 48 per cent higher compared with the figure for the four years and nine months before the revolution.

CSO: 5500/4729

MINISTRY SETS UP TELECOMMUNICATIONS TRAINING CENTER

Kabul KABUL NEW TIMES in English 7 Mar 83 p 3

[Text] The Tele-Communications Training Centre has been set up in the framework of the planning department of the Communications Ministry to train technician and technical officers for the ministry.

Stating this to the Kabul New Times, Atiqullah, chief of the centre said: "The centre trains students from the 10th to 14th grades and teaches them subjects like telephone, telegraph, microwave, power and plant radio technology. The centre is assisted by the UNDP and the ITU. Equipment and experts provided these two assisting agencies help greatly in the promotion of technology and skill of the workers."

From its inception in 1344 (1965), 320 students have graduated from the centre. They are all busy working in the various departments of the ministry. The centre, and its various departments play a significant role in providing communication facilities in the country. A department for television technology will also be opened soon.

The academic session is to be promoted to four years after finishing school an additional residential quarter for the students in the near future is to be built as a part of developmental plans. Students are admitted to the centre after the ninth grade", he noted.

CSO: 5500/4730

GOVERNMENT SPONSORS TELEVISION REPAIR SERVICES

Kabul KABUL NEW TIMES in English 6 Mar 83 p 3

[Text] The Communications Ministry, in an effort to solve the difficulties of the people, and in order to facilitate thorough repair of TV sets at favourable economic terms, has set up the central TV repair workshop within the organisational framework of the ministry.

The centre, since its formation has provided valuable service to the people and has so far repaired a great number of TV sets.

Stating this, the president of the technical department for Radio-TV of the Ministry, in an interview to the Kabul New Times, said: "For some time, the people were having some difficulties, in repairing their TV sets. They were obliged to take their TV sets to private repair shops within the city centres who charged them too much while not doing a good job.

In an effort to solve these problems of the people and provide adequate repair facilities in an organised way, the Ministry of Communications has opened the central TV repair shop at the beginning of the 1358, within its organisational setup, which to a great extent has solved the existing problems of the public regarding proper repair of their TV sets.

He added: "The workshop at present only repairs TV sets. But, it is planned that when the centre acquires additional technical personnel and the necessary spare parts, it will open other sections for repair of other technical and electronic appliances and equipments such as radios, taperecorders, video cassettes, etc. Work is going on for its further expansion and to equip it with experienced personnel and modern equipments which will help to provide better technical service for the people."

Engineer Stanickzai, the president, added: "From the beginning to the third quarter of 1361 HS, as much as Afs 5,033,902 has been earned from the repair fees by the center. Also Afs 1,000,000 of the centre is the time spent on repair cooperative which, when it is released will be entered into the state account."

The prices of spare parts

in this centre are stable and the fees taken depends on the time spent on the repair of the TV set. The fee of an hour's work on the Black and White TV sets has been fixed at Afs 100 and for the coloured ones, at Afs 150. Two of the technical personnel are trained abroad and the rest are graduates of the special courses taught by Soviet and Japanese experts.

TV sets repired by the centre are not guaranteed, but the sets from the Soviet Union, being sold by the State Employees' Cooperative are repaired free of charge at this centre.

The centre still faces some problems in finding the needed spare parts for Japanese and German made TV sets, because the producers of the sets do not pay attention to supply of spare parts, but there have been no problems at all with the Soviet-made TV sets, for their spare parts are in plenty and the centre is performing good service in the repair of the latter.

He added: "In order to further facilitate repair of the TV repair branches will be set up in different sections of the city, so that the people will not face problems and they can easily repair their TV sets in their own localities. These branches, in the long run will become the main centres for TV repair in the city", he pointed out.

The existing equipments at the disposal of the centre is inadequate. Plans are on hand to equip it with additional modern machines and equipments in order to achieve reliable and adequate repair service. Though the centre is being run with a limited and rather inexperienced number of people but their achievements so far are good. At present, the centre repairs 20 sets a day.

This reporter's attention was caught by a young member of the workshop. He is Engineer Ghulam Sakhi Nawabzada, who has received his higher education in the field of the coloured TV. Nawabzada said: "Generally, we face problems in the repair of the Colour TV sets because of the unavailability of their spare parts within the country." He urged the institutions importing the coloured TV sets to also import their spare parts and put it at the disposal of the centre so that the TV sets that come to them for repairs can easily be repaired.

Likewise, it is more suitable if the importers of coloured sets, or the Commerce Ministry, before the import of the TV sets, confer with the Central TV repair workshop regarding the kind of the TVs to be imported so that matters relating to their repairs are solved in advance, and the people do not fare any problems with the repair of their TV sets.

CSO: 5500/4730

BRIEFS

FIBRONICS MULTIPLEXER--Haifa--A completely new data distribution system, for ITT Courier users, has been developed by Fibronics Ltd. in this city. That company is an important developer and manufacturer of fiberoptic cables and equipment, as well as advanced instruments for the transmission and distribution of data. The new Fibronics FM-1680 system connects all thirty-two output channels from the ITT Courier 7411 terminal controller to its peripherals through a single standard coaxial cable. On the peripheral side, the FM-1680 links up with ITT Courier terminals--models 2700 and 2790--and with the model 8700 printer. The system's unique design allows for flexible network architecture, including point-to-point, multidrop and star configurations. Data can be distributed with the help of this equipment over distances of up to 3000 feet, but that can be extended to as much as 5000 feet, if the same company's fiberoptic cables are used. Such hookups require the inclusion of suitable fiberoptic interfaces, also available from Fibronics. The series FM-1680 multiplexers can be supplied in economical eight port increments. Additional units can be added, as the need arises, up to the full 32 port capacity. Cost and space savings are also realized through the use of a single cable. [Text] [Jerusalem INNOVATION in English Mar 83 No 88 p 42

CSO: 5500/4520

MOROCCO'S INTERNATIONAL TELECOMMUNICATIONS FACILITIES DESCRIBED

Casablanca LAMALIF in French No 143, Feb-Mar 83 pp 50-51

[Article: Morocco's International Telecommunications"]

[Text] By reason of its privileged geographical position in relation to the African and European continents, Morocco is naturally destined to play a predominant role in the area of international telecommunications.

In order to fulfill this vocation, the government has put out a sizable equipment effort, since the recovery of our national independence, for the development and modernization of our international infrastructure, as is evidenced by the brief summary below of our transmission facilities and our connections with the rest of the world.

A. International Systems and Transmission Facilities

Before independence, the international telephone traffic originating from Morocco went almost exclusively to the two colonial home countries, Spain and France. This traffic was handled by means of a few decametric-wave radio connections.

At the present time, our country has five underwater telephone cables at its disposal:

--the Tetouan-Perpignan cable, capacity 96 telephone circuits, placed in service in 1967;
--the Casablance-Penmarch (France) cable, capacity 640 telephone circuits, placed in service in 1973;
--the Casablanca-Dakar cable, capacity 640 telephone circuits, placed in service in 1977;
--the Tetouan-Martigues (France) cable, capacity 2,580 telephone circuits, placed in service in 1978;
--the Asilah-Burgau (Portugal) cable, capacity 1,260 telephone circuits, placed in service in 1983.

This last-named cable is for the connection with the Portugal-Senegal-Brazil intercontinental-cable system, which was put into operation at the end of 1982.

As for Spain and Gibraltar, Morocco is connected with them by microwave links with capacities of 960 and 60 telephone circuits, respectively.

With the countries of the Maghreb, our country has two cable systems:

--the North African cable, laid in 1952, with total capacity of 80 telephone circuits;
--a modern coaxial cable with capacity of 2 X 1,260 telephone circuits, extending from Rabat to Tlemcen (Algeria). This cable, the laying of which was completed on the Moroccan side in June 1981, will gradually take over from the old cable.

Intercontinental relations with the United States, Canada, Saudi Arabia and Kuwait are provided for by the Muhammad V satellite-telecommunications ground station installed at Souk El Arbaa des Sehouls (30 km from Rabat).

This standard-A station has been in service since 7 January 1970; it was the first station built on the African continent. Its current capacity comes to 48 telephone circuits plus 1 television channel.

It is planned to install at the same site an additional antenna for the future ARABSAT inter-Arab telecommunications satellite, whose entry into service is planned for the beginning of 1985. The initial capacity for this antenna will be 84 telephone circuits plus 1 television channel.

Furthermore, Morocco, concerned for the security of its international connections, which can be guaranteed only by diversification of the means of routing, has given itself the irrevocable right of use of telephone circuits in the following cable systems:

--MAT-1 cable, Spain-Italy: 12 telephone circuits
--Algiers-Pisa (Italy) cable: 12 telephone circuits
--TAT-6 cable, France-United States: 14 telephone circuits
--Spain-United Kingdom cable No 3: 36 telephone circuits
--Artemis cable, France-Greece: 12 telephone circuits
--Marseille-Palo (Italy) cable: 60 telephone circuits
--Fraternite cable, Senegal-Ivory Coast: 36 telephone circuits.

By reason of this developed and varied infrastructure, Morocco's international telecommunications network is rightly considered to be among the most reliable and modern on the African continent, even though the domestic network cannot lay claim to such a praiseworthy situation.

B. International Telephone Relations

With the different systems mentioned above, the Moroccan network comprised, at the end of 1982, 1,385 international telephone circuits of all kinds; they fall into the following categories:

--underwater cable : 1,060 circuits to European countries, West Africa, the United States and the Middle East;

--INTELSAT satellite : 33 circuits linked to Saudi Arabia, Kuwait, the United States and Canada;
--microwave links : 225 circuits to Spain, Gibraltar, Italy and the United Kingdom;
--ground cable : 67 circuits for Algeria, Tunisia and Italy.

Thanks to these circuits and three international switching centers, installed at Casablance (two centers) and Rabat (one center), entirely automatic telephone service is presently possible for calls originating in Morocco and going to the following 20 countries:

--FRG
--Saudi Arabia
--Austria
--Belgium
--Canada
--Ivory Coast
--Spain
--France
--Greece
--Iraq
--Kuwait
--Lebanon
--The Netherlands
--Portugal
--United Kingdom
--Senegal
--Switzerland
--Tunisia
--United States
--Italy

As regards the international telephone traffic originating in Morocco, it represents a total annual volume on the order of 50 million charged minutes, breaking down as follows:

--Europe: 47 million minutes - 94 percent
--America: 1.5 million minutes - 3 percent
--Africa: 900,000 minutes - 1.8 percent
--Asia and Oceania: 600,000 minutes - 1.2 percent.

Finally, it should be noted that there were 191,416 telephone-service subscribers in Morocco at the end of 1982, among whom:

--180,175 subscribers have fully automatic service, for an automation rate of 94 percent;
--147,932 subscribers--i.e., 82 percent of the total--have access to automatic service for outgoing international calls.

C. International Telex Relations

Telex service was created in Morocco in 1955; it is entirely automated, and had 4,784 subscribers as of 31 December 1982.

There is entirely automatic service from Morocco to 88 countries by means of 383 telex circuits established with the following countries:

--Algeria	10 circuits	--Lybia	2 circuits
--FRG	23 circuits	--The Netherlands	13 circuits
--Austria	16 circuits	--Portugal	18 circuits
--Belgium	20 circuits	--Romania	3 circuits
--Ivory Coast	6 circuits	--United Kingdom	42 circuits
--Spain	22 circuits	--Senegal	4 circuits
--France	78 circuits	--Sweden	3 circuits
--Gibraltar	4 circuits	--Switzerland	16 circuits
--Greece	8 circuits	--Tunisia	8 circuits
--Italy	21 circuits	--United States	66 circuits

The remaining countries--i.e., 62 [as published]--are reached manually with transit through a European center or an American company.

As regards the telex traffic originating in Morocco, it is estimated at 5.5 million charged minutes for the year 1982, breaking down as follows:

--4,730,000 minutes to Europe - 86 percent
-- 176,000 minutes to Africa - 3.2 percent
-- 345,000 minutes to America - 6.3 percent
-- 248,000 minutes to Asia and Oceania - 4.5 percent.

D. International Accounting Concepts

An international telephone or telex communication exchanged between Morocco and a given country goes by way of a direct circuit established with the country, if one exists; in the contrary case, the communication is routed by transit through one, or in exceptional cases two, third countries.

The purpose of the international accounting is to fix the remuneration relating to the means made available by each country for exchange of communications.

This accounting is greatly facilitated by the near-standardization of the costs as calculated in function of the services rendered, which has made it possible to establish multilateral agreements that are very useful for meeting, in a satisfactory manner and with speed, the needs for telecommunications among the countries.

The methods of remuneration between administrations follow precise rules fixed by the International Telecommunications Union; they are of four types:

1) lump-sum remuneration: applies when the administration of the country in which the communication originates (the term "communication" being understood as either a telephone conversation or a telex communication) pays the administrations of the countries that participate in the establishment of the circuit on the basis of a lease, or any other form of permanent concession, relating to the means made available;

2) remuneration by traffic unit: applies when the administration of the country in which the communication originates pays the administrations of the countries that participate in the establishment of the circuit in function of the number of traffic units transmitted and verified--that is, the number of minutes of communication;

3) division of distribution receipts: is applied when two terminal administrations fix, on the basis of the charges borne for establishment of the circuits normally used in both traffic directions, a single total rate to be divided half-and-half between them. This particular method is used mainly in intercontinental service for which the means of transmission are generally provided by satellites or underwater cable;

4) remuneration of the first transit center: applied when the administration of the country in which the communication originates, which does not have di-

rect circuits by way of a given connection or, when it does have them, when they are momentarily overloaded or interrupted, is obliged to route traffic through an international switching center of another country.

By way of example, the breakdown of the telephone charges currently applied with certain countries is as follows:

1) Existing direct circuit--half-and-half breakdown between the two terminal countries:

--Morocco-Saudi Arabia : 10.80 DH per minute
Morocco's share : 5.40 DH
Saudi Arabia's share : 5.40 DH

--Morocco-United States : 18 DH per minute
Morocco's share : 9 DH
United States' share : 9 DH

--Morocco-Senegal : 6.75 DH per minute
Morocco's share : 3.375 DH
Senegal's share : 3.375 DH

--Morocco-European countries (France, FRG, Belgium, The Netherlands, Switzerland, United Kingdom) : 6.75 DH per minute
Morocco's share : 3.375 DH
European country's share : 3.375 DH

2) Relations with transit through a third country:

--Morocco-Jordan via France : 10.80 DH per minute
Morocco's share : 3.60 DH
France's share : 3.60 DH
Jordan's share : 3.60 DH

--Morocco-Pakistan via Italy : 19.25 DH per minute
Morocco's share : 6.58 DH
shares for Italy and Pakistan : 12.67 DH

--Morocco-Brazil via United States : 23.75 DH per minute
Morocco's share : 5.95 DH
shares for United States and Brazil : 17.80 DH

E. International Organizations

Morocco is a member of the principal world and regional telecommunications organizations--i.e.:

--the International Telecommunications Union (ITU), whose headquarters is in Geneva;
--the Pan-African Telecommunications Union (UPAT), with headquarters in Kinshasa;
--the Arab Telecommunications Union (UAT), with headquarters in Baghdad;
--the International Satellite-Telecommunications Organization, INTELSAT, with headquarters in Washington;
--the Arab Satellite-Telecommunications Organization (ARABSAT), with headquarters in Riyadh.

11267
CSO: 5500/4610

LOANS FOR TELECOMMUNICATIONS NETWORK

LD221549 Kuwait KUNA in English 1039 GMT 22 Mar 83

[Excerpt] Kuwait, 22 Mar (KUNA)--Sudan is to receive KD.5.6 million (about 19 million dollars) from the Arab Fund for Economic and Social Development to finance telecommunications, drinking water supply and rural development projects.

The KD.1.3 million loan will be used to finance the fifth pan-Arab telecommunications project by installing and equipping the earth stations related to the ground sector of the Arab satellite network.

The network aims at linking all parts of the Arab World and complementing the terrestrial telecommunications network currently under construction or expansion. The satellite network will additionally act as an alternative routing in carrying part of the traffic should the terrestrial links become out of action.

The project whose total cost is estimated at KD.13.25 million of which KD.12.0 million is in foreign currencies, will participate in meeting the increasing traffic and telex demands, transmitting sound and television programs and other telecommunications facilities.

In the Sudan, the project consists of installing an earth [ground] station of dual polarisation and 11 meter diameter to operate with the Arab satellite, in addition to other works such as expanding the terrestrial link between the earth station and the main exchange, training, maintenance and consultancy services.

The total cost of the project in the Sudan is estimated at KD.4.0 million of which KD.1.3 million is in foreign currency to be provided by the Arab fund.

Nine other Arab countries received loans for the communication project: Syria, Jordan, Tunisia, Algeria and Morocco received KD.10 million each; Somalia, Mauritania and South Yemen KD1.2 million each and Djibouti received KD.1.1 million.

The public telecommunications corporation, the beneficiary, will supervise the implementation and operation of the project in the Sudan scheduled to be completed in mid-1984.

CSO: 5500/4611

BRIEFS

OPTICAL FIBERS PRODUCTION--SOUTH Africa will soon start producing its own optical fibre telephone cables, the Postmaster General, Mr H O Bester, said yesterday. Addressing a Press conference shortly before the Post Office Budget was introduced to Parliament yesterday afternoon, he said several optical cable systems were on order and due for installation, the longest being between Vereeniging and Johannesburg. Considerable advances had been made in optical fibre which had greatly increased their carrying capacity compared to that of the first optical fibre cables installed in South Africa in 1980. An agreement had been finalised with a South African firm to draw optical fibre and once production started, manufacture of cables would commence, Mr Bester said. The introduction of optical fibre not only created new technological and manufacturing opportunities but held out the promise of considerable savings. One such saving was through the lengthening distance reuqired between repeater units. Repeaters were expensive items and optical fibre had now stretched the distance up to 100 km. [Text] [Johannesburg THE CITIZEN in English 16 Mar 83 p 15]

RADIO SR CLOSES--RADIO SR is closing down on March 31, as the service has failed to attract a large listenership. Mr Bill Otto, marketing director of Swazi Radio, said: "Listenership has been dropping in the past two years. A radio station needs a large listenership to get advertisers just like a newspaper needs a big circulation." He added that should a more competitive situation arise at a later stage, consideration would be given to re-instating the service. Mr Otto said disc jockey Cocky Two Bull and librarian Reuben Mdluli would remain on the staff of Music Radio 702. "We are helping dee-jays Mesh Mapetla and Willie Moloisi to find employment. Lucky Ntuli resigned a month ago," said Mr Otto. The other services of Swazi Music Radio Paralelo 27 and Radio Truro, will remain in operation with the latter increasing its hours. [Text] [Johannesburg SOWETAN in English 16 Mar 83 p 2]

BOPHUTHATSWANA TV RELAYED--The envisaged domestic television service for Bophuthatswana is to be relayed to transmitters in South Africa to reach citizens of Bophuthatswana living in South Africa. A joint statement by the governments of South Africa and Bophuthatswana says this was decided at a meeting of representatives of the two governments. Negotiations to finalize further details are to continue. [Text] [MB311247 Johannesburg Domestic Service in English 1115 GMT 31 Mar 83]

CSO: 5500/126

BRIEFS

GERMAN TELEX MACHINES--A cargo of 620 telex machines destined for the PTC arrived at Harare Airport last week on a special German Cargo airfreight charter flight, arranged jointly by Union Transport Germany and Mitchell Cotts Airfrieght, Zimbabwe. The telex machines were flown direct to Harare from Siemens AG, West Germany. [Text] [Harare THE FINANCIAL GAZETTE in English 25 Feb 83 p 8]

CSO: 5500/120

EUROPEAN AFFAIRS

BRIEFS

EUROPEAN SATELLITE CONSULTING GROUP--Four European consultant companies (British Teleconsult, of England; Datecon, of FRG [Federal Republic of Germany]; Satel Conseil of France; and Telespazio, of Italy) have now formed a GIE [Economic Interest Group] under French law--the ESCO [European Satellite Consulting Organization]--the purpose of which will be to furnish consultant services and technical assistance in all domains connected with satellite communications. Its fields of specialization will cover the definition of systems, the drawing up of specifications for industrial requests for bids, the evaluation of proposals, product manufacturing surveillance and monitoring, and the installation of systems, their operation, training of personnel, etc. Free of any industrial ties, ESCO will put to good account the experience gained by its founding organizations during 15 years of participation in European space programs and in the development of the Intelsat, Inmarsat, and Eutelsat systems. Mr Salvotori (Italy) has been appointed president of ESCO, and Mr Deloffre (France) its executive secretary. [Text] [Paris ELECTRONIQUE ACTUALITES in French 4 Mar 83 p 8] 9399

CIT ALCATEL FACTORY IN IRELAND--The CIT-ALCATEL [International Telephone Company-Alsatian Company for Atomic, Telecommunications and Electronic Construction] plant at Bandon, in southern Ireland, has now been inaugurated by the Irish minister of PTT. This production unit, established in cooperation with the Telectron Company, is part of the E-10 system program adopted in 1980 to expand the Irish telephone network. The contract, covering some 50 telephone exchanges, represents an initial order of 500 million francs. The new company, known as Telecom Alcatel, which will manufacture components of the E-10, will invest 60 million francs and employ 400 persons. The Irish IDA [Industrial Development Agency] has already granted substantial subsidies for this project and is furnishing the temporary premises that have enabled CIT-ALCATEL to have already gotten its production of the E-10 under way. [Text] [Paris ELECTRONIQUE ACTUALITES in French 4 Mar 83 p 8] 9399

CLTO FIBER OPTICS IN FRG--The CLTO [Lyonnaise Optical Transmissions Company], a subsidiary of Cables de Lyon, has delivered multimode optical fibers of very high quality (attenuation less than 0.8 dB/km and passband exceeding 1,200 MHz per km at a wavelength of 1.3 micrometers) to another subsidiary of Cables de Lyon, Kabelmetal Electro, in FRG [Federal Republic of Germany]. This will enable Kabelmetal Electro to build the first 140-Mbits/sec telecommunications link over a distance of 18 km without intermediate repeaters, using exclusively French-manufactured fibers. [Text] [Paris ELECTRONIQUE ACTUALITES in French 25 Feb 83 p 7] 9399

CSO: 5500/2637

FEDERAL REPUBLIC OF GERMANY

BUNDESPOST ANNOUNCES TELETEXT RATES

Duesseldorf WIRTSCHAFTSWOCHE in German 4 Feb 83 pp 46-48

[Article: "A Medium on the Road to Success"]

> [Text] In the fall, the Federal German Postal Service will put into practice its new teletext communications system. For a long time, agreement could only be reached on one thing, the fact that the new medium was going to come; now the uncertainty about the how and when has been resolved. Shortly before the finalization of the legal framework, during the 4 February media meeting by the minister-presidents of the Laender, the Postal Service outlined its rate structure. Because of its many different possibilities for use in the commercial as well as in the private sector, teletext is considered a precursor of the information society.

Anxious suspense, skeptical calmness and then a return to optimistic euphoria--the change of feelings occurs in quick succession in an industry which is concentrating on the new medium, the teletext (BTX): Everybody is waiting for the day X, because after 3 years of field tests in Berlin and Duesseldorf the new communications system is to be introduced throughout the FRG at the time of the International Broadcasting Exhibition, which will take place in September in Berlin.

The confused emotionalism in the teletext industry is understandable. The time of transition from subsidized tests to the harsh reality of the market left too many question marks. The uncertainty is too great when it comes to changing from technical play to serious economic reality.

The Federal German Postal Service contributed considerably to this uncertainty. Instead of cooperating openly with the suppliers of information, as was the case in the past, the Postal Service remained silent for quite some time with respect to the question of fees. Finally, on 14 January, the all-clear signal was given: Christian Schwarz-Schilling, minister for post and telecommunications, released for publication the proposal that had been submitted to the Postal Administrative Council, which will discuss the rates on 21 March. Accordingly, the planners in the ministry revised their original model calculations downward quite a bit. It appears that the basic cost, for instance, of less than DM 100 per month for a regional 50-page program and an installation fee of DM 8 averted the English disease—shortness of breath and growth problems due to excessive long-distance rates—seems to be under control. Furthermore, the starting phase will be extended financially, because in 1984 the Postal Service will forego a large proportion of its teletext revenues and in 1985 it will be satisfied with half of the income. Nevertheless, it is doubtful that every small supplier will be able to continue in the system or whether he will be able to continue his current program volume (see WIRTSCHAFTSWOCHE No 5, 1983).

In addition, the constant changes concerning the state agreement, which will undergo final deliberations by the minister-presidents of the Laender during the 4 February Media Conference, is increasing the uncertainty. Radio representatives partially accepted the criticism of information suppliers; they improved the wording of the regulations concerning data protection and advertising, making them more acceptable. Nevertheless, the severely criticized special privileges for the new medium remain. Should the agreement move smoothly through the parliaments of the FRG Laender, BTX will be able to start in the fall within a more or less calculable legal framework.

There is still one big unknown factor, the new European standard, which permits a refined graphic display but which also increases the investment costs substantially. For quite some time, it seems impossible to fulfill the Postal Service promise, according to which the required decoder would be available for approximately DM 1,000. But now the Loewe Opta Co is the first one to develop such a device. It is ready for mass production and meets the conditions of the new standard. As a consequence, most of the producers of television screens, keyboards, input terminals and editing equipment will be able to exhibit their new generation of products in April at the Hannover Fair.

Eric Danke, administrator of the BTX project in the Federal German Postal Service, energetically refutes obstinate rumors that IBM is still having difficulties with the new postal computers and that the start of BTX would be delayed: "I have no doubt that the technology will be available when the time comes." Nevertheless, he admits that many technical difficulties will still have to be solved during the transitional period.

In spite of all these apprehensions, the basic mood among the BTX participants is a positive one. It may be that this attitude is based on an optimism which reflects the financial involvement of the participants and that they simply have to believe that it was not in vain. Nevertheless, the signs cannot be ignored that sooner or later a viable market will develop.

The prerequisites for success are supplied by the medium itself. Because of its versatility, it offers an extraordinary array of additional features, and because of its interactive relay technology for text and graphics, which utilize the extensive telephone network, BTX is able to retrieve information, order goods, execute backing transactions or process data long distance. Seen as a complex information system, teletext offers the possibility of controlling internal organizational procedures, for instance, the control of external services. Adalbert Rohloff, business manager and member of the executive committee of the BTX Suppliers' Association, is an expert on the subject, but he never ceases to be amazed: "Today teletext offers opportunities for use that nobody would have anticipated a year ago."

In field tests, many of the advantages of the new BTX service due to greater efficiency are already gaining in significance. According to an investigation by the Kammerer Research Group, which monitored the BTX test in Berlin scientifically at the request of the Federal Postal Service, 28 percent of the commercial users partially replaced letters with BTX, 27 percent replaced parts of printed reference works and 18 percent parts of professional journals with BTX. It is generally expected that an improvement in the BTX supply will reduce the flood of information printed on paper. Rising energy and transportation costs will do the rest.

Furthermore, BTX offers the economic prerequisite for the development of different markets. In contrast to the transmission of electronic information by radio, BTX can determine the charges for the exchange of information and consequently bill the individual. The suppliers can mark their pages with prices: the Postal Service will be able to collect the fees from the recipients. Prof Peter Hecheltjen of the BTX research group at the University of Trier said: "It will make profitable the collection and processing of a lot of information."

The success of the new service is also guaranteed by the determination of the Federal Postal Service to make it an economic success and to work closely with the suppliers--in spite of periodic disputes about fees. Postal Service officials are planning to spend DM 500 million by 1986 for the expansion of the system to enable 78 percent of all telephone customers to join the BTX service. The goal is to extend the service to everyone in the FRG by 1988.

Information suppliers were also counting on this wide distribution of the medium. They have already invested between a few thousand and several million marks to gather application experiences. Although the approximate number of the participants in the field tests came only to 7,000, which does not represent a significant market potential, last year's developments appear hopeful. The number of suppliers doubled, and currently there are about 1,500 for each test area. The offer of available pages increased from 162,000 to 285,000 in Berlin and to 263,000 in Duesseldorf.

It is generally expected that BTX will initially find acceptance in commercial communication. Nevertheless, field tests indicate that the market of private households also offers early opportunities. At any rate, 88 percent of private participants in Berlin and 85 percent of those participating in Duesseldorf want to continue even if the cost should be increased. Seventy percent of the participants especially appreciate the advantages of using BTX when ordering from mail-order houses and when doing their banking. Accordingly the following is conceivable: The more banks will offer this service, the more the additional usefulness of BTX will rise.

Table 1. Millions of Subscribers

Prediction About the Spread of BTX in the FRG Until the End of the Decade

Year	Subscribers	BTX Connections per 1,000 Telephone Trunk Lines
1983	40,000	1.64
1984	150,000	5.93
1985	450,000	16.09
1986	1,000,000	33.86
1987	1,559,000	57.51
1988	2,289,000	83.03
1989	2,976,000	106.40
1990	3,550,000	125.31

Source: Federal German Postal Service

A more widespread use of the new medium is simply a generation problem of television sets. On the average, television sets are used for 7 years. When the customer is ready to buy a new set, it is expected that he will be willing to spend an additional DM 100 or 200 for the integrated decoder to receive BTX. How fast this is going to happen, will depend on the marketing efforts of the television-set industry. At the present time they are still concentrating on stereo sound. Furthermore, the market success of microcomputers (the Diebold consulting firm expects that by 1988 more than 2.6 million microcomputers will be in use in the FRG) will directly affect the spread of the use of BTX. All the important manufacturers are preparing equipment which can be connected according to the new standard. Because of this symbiosis, not only BTX but also the small computer will become more attractive, above all, because it can load its programs via the postal system. Klaus Brepohl, manager of the Center for New Media in the Institute of the German Economy, predicts that the original text service will become a cheap "People's EDP."

This possibility of development for BTX substantiates the hope that many of today's frustrations during use will be eliminated in the course of time. Investigations confirm the assumption that the current search-tree scheme and the joining of pages frequently have a deterrent effect. Systems participants who want to solve their thirst for information purposively, must instead engage in an uncoordinated search for information, and frequently they become discouraged and throw in the towel. Nevertheless, the learning processes of inquirers as well as of suppliers who, after all, want to sell information and who, therefore, must reach interested customers will gradually develop a simpler procedure.

In addition, technology is coming to their aid. Intelligent decoders, like the Mupid instrument from Austria, for instance, which is now also sold in Germany, already permit the use of statements for reaching the search tree instead of using a series of numbers. External computers provide additional capacities for the optimization of the search process because they are not bound by the nomenclature required by the Postal Service. Finally, plastic cards with microprocessors simplify bank transactions via the television screen.

To be sure, the road to the mass market for BTX has been delineated; nevertheless, it is full of danger for the investor. If he gets involved too early and too deeply financially, he may lose his financial steam before the new market flourishes. If he gets involved too late, he may miss the connection and lose market opportunities. One motto, however, applies no matter what: to be there, to gather experiences and to achieve competitive advantages.

Companies in the area of printed information are particularly affected. They must not only look for new markets but also emphasize more strongly the specific advantages of their old medium, even if their initial fears of being replaced by BTX have vanished in the meantime. Today greater emphasis is being placed on the complementary function of the new service. For example--as is the case with the SAARBRUECKER ZEITUNG--the customer can store his classified ad in the BTX system for an additional charge of DM 5 per week.

Of course, it would be disastrous to look at BTX in its present state and see it as something static. The system may change completely within a few years. The medium will make a decisive jump in quality in the 1990's, when the data flow will be transmitted via an integrated wide-bank net on a glass-fiber base, and data services that today still operate independently will merge with BTX.

When that day arrives, even the last one will have to admit when looking back: BTX was the entry into and the precursor of the information society.

Table 2. Calculable Fees for the User

BTX Rate Structure Proposed by the Postal Service

Item	Rate
Installation and Modification Fees	DM 55 per application
Fixed Monthly Charges	
BTX connection with hookup equipment	DM 8 per connection
Access to special code	DM 8 per code
Additional privileges:	
Statewide suppliers	DM 350 per index page
Regional suppliers	DM 50 per index page
Each additional regional index page	DM 15 per index page
Closed user group (GBG)	DM 50 per index page
Access to connection to external computer	DM 250 per DatexP address

Storage Fees	Rate
Information pages	
—statewide	7.5 pfennigs per page/day
—regional	1.5 pfennigs per page/day
Restoring of retrieved dialog pages	1.5 pfennigs per page/day
Entries in distribution lists for communication	1.5 pfennigs per entry/day
Entries in lists of GBG members	1.5 pfennigs per entry/day
Entries of cousers	5.0 pfennigs per entry/day
User Fees	
Use of input system in dialog	DM 0.02 per minute
Inserting of pages	
—immediately	DM 0.10 per page
—time-delayed	DM 0.05 per page
Processing of material data carriers	DM 20 per data carrier
Retrieval of pages from extraneous regions	DM 0.02 per page
Sending of reply pages/communication	DM 0.40 per page
Transmission of a page from an external computer	0.5 pfennigs per page
Sending of dialog pages in computer association	1 pfennig per page
Other Fees	
Collection of compensation	DM 20 + 2 percent per credit
Access to connections to subject indexes	DM 0.40 per connection
Access to connections to subject indexes	DM 0.05 per connection/day

8991
CSO: 5500/2626

BRIEFS

FIRST INTERCONTINENTAL TELEX LINE--According to a report from Bonn, the first intercontinental TELEX line, linking West Germany to Canada, was inaugurated on February 21 by the West German Postmaster, Mr Christian Schwartz-Schilling. The teletext, introduced to the world for the first time in 1981, makes it possible to send documents rapidly and in their original form via electronic telex. A text containing two pages and 2,000 signs can thus be routed from West Germany to Canada in 15 seconds for 1 Mark (40 cents). The same operation by ordinary telex or by telephone would cost 16.50 and 22 times more, respectively, and in this case the text would not reach its destination in its original format and page layout. The Teleglobe Canada company in Montreal, in a report announcing the initialization of the TELEX link with West Germany, stated that this system offers a means of intercommunication between electronic memory equipment or text processing equipment, in compliance with international teletext standards. [Text] [Paris AFP SCIENCES in French 24 Feb 83 p 14] 12204.

CSO: 5500/2631

SATELLITE INDUSTRY SEES 1982-1983 AS 'TURNING POINT'

Paris L'USINE NOUVELLE in French 27 Jan 83 pp 63-65

[Article by Olivier Fleurot: "Communications Satellites: The Moment of Truth for the French"]

[Excerpts] The next decade will be decisive for the French space industry. Programs for civilian telecommunication satellites are multiplying, and should represent 50-60 billion francs. Almost entirely isolated from the largest market, that of the United States, Matra, Thomson-CSF, and Aerospatiale hope to capture a significant portion of the European markets and international contracts. The selection of partners will be a determining factor.

For the French--Matra, Thomson, and Aerospatiale--the moment of truth is here. But the problem is not a simple one: the major obstacle is the very structure of the market. Orders come either from international organizations such as Intelsat or Eutelsat, where they are distributed among member nations, or from national agencies, where the local enterprises take the lion's share. The only truly open market is that of countries in which the local space industry is not sufficiently strong: Indonesia, the Arab countries, Mexico, and India, for instance.

Beyond simple telephone conversations, the stakes include a mastery of future digital communications, such as videoconferences, telecopy, data exchange among computers, and electronic mail.

The most typical example of these new users is Satellite Business Systems (SBS). A joint subsidiary of Aetna Life and Casualty, Comsat General Corp, and IBM, SBS now has three satellites and a network of 100 land stations. Its original aim was to offer global telecommunication services to private enterprise. But because the market slot is not sufficiently wide, the company is becoming increasingly interested in telephone links for individuals.

To the Europeans, this very active market has long seemed to be the private hunting grounds of the Americans. There was certainly no question of reaching accross the Atlantic as prime contractor (project manager) or integrator (subsystem assembly and testing).

Thomson, however, had succeeded in breaching the barrier, a satellite being composed of two essential parts: the vehicle and the payload, which is the on-board electronics that receive, amplify, and retransmit signals through repeaters. "We have for instance, supplied TRW with 60 receivers for TDRSS (Tracking and Data Relay Satellite System) satellites, and sold traveling wave tubes--essential components in repeaters--to Ford Aerospace for the Intelsat V program," says Michel Lasalle, commercial director of the Thomson-CSF space division (2000 employees), created on 1 January 1982.

Intelsat V, a program of nine satellites awarded to Ford Aerospace and Communications as prime contractor for 300 million dollars, was the first international commercial telecommunication satellite program to use European tubes. A test shot which in 1982 became the largest contract in the short history of this sector, awarded to Hughes Aircraft: Intelsat, the international telecommunications satellite organization, which gathers together 106 countries, entrusts it with the construction of five satellites in the Intelsat VI series, for 700 million dollars. "We are responsible for a large portion of the electronics, about 8-10 percent of the contract value. But more importantly, in addition to Intelsat VI, Hughes has decided to involve us in American civilian programs," continues Mr Lasalle. Thomson-CSF has thus found a lasting partner and gained a foothold in the United States.

But the most solid support for the Europeans will come from the programs that they will implement themselves. In this respect, 1982 and 1983 will be pivotal.

European Alliance for Matra

Until now, the pre-operational satellites Symphonie, launched in 1974 and 1975, and the European satellite OTS (Orbital Test Satellite) launched in May 1978, were the only civilian contracts. The definitive formation of Eutelsat in September 1982, the finalization of the Marecs (maritime links) and ECS (five European telecommunication satellites) programs, and the progress of the French Telecom 1 program, provided an unprecedented impetus for French manufacturers.

While Thomson-CSF is responsible for payloads, it is Matra who has been selected as prime contractor for Télecom 1. On the other hand, Matra is the integrator for the ECS satellites, while British Aerospace Dynamics Group is their prime contractor. Actually, the two companies created a joint venture in 1981, Satcom International, which consecrates their long collaboration. Matra Espace employs 900 people, with a turnover of 900 million francs in 1982, against 380 million in 1980. The company is thus in a strong growth phase and has invested 200 million in the Toulouse integration center, which employs 450 persons.

"Space is a cyclical activity which experiences growth phases for two or three years, and then levels out. It consists of a small number of large contracts. Next year we will see a plateau at about 1 billion francs," explains Jacques Battistella, head of the marketing division. However, between now and 1984, each Ariane flight will carry a satellite assembled by Matra, which is depending on a European alliance with British Aerospace to block the American manufacturers. An effective strategy to win purely European contracts, but less so outside of Europe. "What's important," continues Mr Batistelle, "is to maintain prime contractor capabilities. Our approach is more difficult in the short term, but it will pay off in the long run."

The refusal to be merely a supplier of black boxes, has prevented Matra from participating in the Intelsat programs, but the company has other successes as prime contractor in the field of scientific satellites. The latest example is the European program Hipparcos, in which Matra, prime contractor for the European consortium Mesh, was awarded phase B, a phase of studies which should result in an overall contract of 600 million francs.

A non-negligible part of Matra's growth is due to the technical cooperation agreements it has had for 15 years with the American manufacturer TRW. "Our exchanges have gradually become more balanced than the original direction of United States to France. We have free use of their patents and vice-versa," indicates Mr Battistella. No programs exist between the two companies, because TRW works primarily in the military field.

On the markets that are more open to international competition, the might of Hughes is difficult to challenge. However, Snias had good success last year. Associated with Ford Aerospace (subsidiary of the automobile manufacturer), it obtained a contract for the three satellites of the Arab organization for a sum of 135 million dollars. At the beginning of November, Aerospatiale and Eurosatellite Gmbh--joint subsidiary of AEG-Telefunken in FRG, ETCA (Technical Studies and Aerospace Constructions) in Belgium, MBB (Messerschmitt Bolkow Blohm) in FRG, and the French companies Thomson and Aerospatiale--together with Swedish Space Corporation, signed a letter of intent for the construction of the Tele-X satellite for direct television and video data transmission to Sweden, Norway, and Finland.

Snias Ambition: 5 Percent of the World Market in 1990

This is fallout from the work on the TdF-1 direct television satellites, carried out by the French manufacturer with the German company MBB, within the Eurosatellite program. Aerospatiale, responsible for the management of the Tele-X program, will build the thermal control system and the solar power unit, and will integrate the satellite at its Cannes plant. The final contract would be 650 million francs. "We must not wait any longer if we are to exploit this emerging market. We have to act now. In five years all the seats will have been taken and it will be too late," declares Charles Bigot, commercial director of the ballistic and space systems division of Aerospatiale. The goal is clear: the company will be one of the large space industrialists, and expects to garner 5 percent of the world market, which means a space activity of 1 billion francs in 1990, thanks to its alliances with European or American partners.

Turnover should double in the next three years

	Matra	Thomson-CSF (space division)	Snias
1982 turnover	900 MF	450 MF	unknown
Goal	1900 MF in 1986	1000 MF in 1985	1600 MF in 1990
Current personnel	900	900	1000-1100
Specialties	Prime contractor Vehicle assembly	Payloads, land stations (Telspace)	Vehicle assembly, solar power unit, thermal regulator
Foreign partner	British Aerospace TRW	Hughes Aircraft	Ford Aerospace, MBB

The market for civilian telecommunication satellites is large in terms of the volume of activity it generates. But it is also strategic for the electronics sector as a whole, to the extent to which it requires the most advanced electronic components. In the United States, the military or NASA programs have encouraged the development of computers, microprocessors, and integrated circuits which have fertilized the entire industrial structure.

The new wave of satellites is providing Europe with an opportunity that must be seized. If the project for the French military satellite Samro were to arrive in time, it would have a beneficial effect as technical impetus for the French industry. Not to mention that it might cause the French to achieve a better unity of strength.

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PTT PLANS POLICY AROUND TELECOMMUNICATIONS DEVELOPMENT

Fr 27 Billion Invested in 1982

Paris LES ECHOS in French 27 Jan 83 p 8

[Article by Balerie Lecasble: "Telecom Presents a Growth Plan to the Government: Lowering Prices by Three Percent and Increasing Production by Three and One-Half Percent Per Year"]

[Excerpts] The grand design of industrial policy called industrial planning, which was established on 10 May, has, so far, made only a few timid steps. It began today to show its first results.

Even though the "copy" presented to the government by the directors of the "nationalized" companies still resembles a rough draft with the main points barely outlined, the PTT ahead of the others, has just produced a "medium-term administrative plan," a sort of "operating contract" between the government and the "Telecom company."

It will become, in this way, a sort of model a sort of moedel, the precursor of that which could be the relationship between the state and the public sector in the future. At the same time discussions are taking place at the SNCF [the French National Railway], EDF [French Electric Power Company], and at the Charbonnages [French Coal Board].

It all relates, as a matter of fact, to a nine-page document which traces all of the financial objectives of the Postal and Telecommunications service for the next 5 years.

These are financial objectives which, of themselves, lead the industrial program which has already been widely announced by Louis Mexandeau. It is essentially the developments of telematics and the installation of cable networks which will put France on the extreme cutting edge of the technology.

There are two chaperts which trace the future path of the PTT. The first concerns telecommunications, a fast-growing area whose main ambition is to keep the utilization account in equilibrium; the second concerns the Postal Service where the efforts tend toward limiting the anticipated drop in activity.

Investments Maintained at 27 Billion

The objective is clear. Come what may, the PTT wants to retain its investment program as specified under telecommunications based on maintaining the 27 billion spent in 1982, in constant francs, until 1977. Because if providing telephone equipment declines, telematics especially cable, will be there to pull the ox out of the mire.

The second subject to consider is the distribution of productivity gains which are estimated at 3.5 percent per year. The customers will be the first to benefit by seeing the cost of telecommunications drop at a rate of 3 percent

The employees, in their turn, will profit from it, since, in addition to the guarantee of their buying power against an inflation rate of 8 percent, the salary fund will rise half a point each year.

Finally, during each financial year, the accumulated amount in the international financial market may not exceed 50 billion francs in total, including all loans. This sum woild act as a limit and not--contrary to the figures quoted above--as an objective to be attained.

Mexandeau Outlines Goals

Paris LES ECHOS in French 7 Feb 83 p 6

[Excerpts] Twenty-four million telephone lines in 1986, corresponding to the equipment in 94 percent of the households, and 3 million videotex terminals are the main objectives written in the medium-term administrative charter for telecommunications presented by Mr. Louis Mexandeau, the PTT Minister (see LES ECHOS of 27 January).

These objectives would be attained by maintaining a volume of investments at the annual level of 27 billion francs, of which 10 percent is earmarked for the development of cable networks and fiber optics.

The telecommunications charter is still subject to last-minute arbitration with the prime minister, especially on the question of financing. Mr. Mexandeau affirmed that the link with the general budget of the nation woild be redistributed among the agencies so as to effect the movement of funds in both directions: reductions in the case of bad economic situations or supplementary funds for telecommunication equipment.

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TELECOMMUNICATIONS FIRMS DISCUSS FUTURE TECHNOLOGICAL CHOICES

Paris ELECTRONIQUE ACTUALITES in French 28 Jan 83 pp 1, 7

[Article by D. Levy: "Technological Choices in Cable Networks and Their Economic Stakes, at the Marnes Convention of Cities With Cable"]

[Text] Telecables 82, first Convention of Cities with Cable, held on 20-22 January at Marnes-la-Vallee, near Paris, provided a meeting opportunity for those called upon to play a role in the extensive program for a videocommunications cable network, approved by the government last November (see ELECTRONIQUE ACTUALITES of 12 November).

On the eve of the industrial consultation launched by PTT, which will conclude with a first batch of orders for 100,000 connections beginning this year, the discussion was dominated by the technological choices for future networks. Indeed, these choices which are backed by formidable economic and industrial stakes, will determine the success or failure of the operation. It all hinges on the narrow margin of options that exists between a sufficiently attractive service offered to first subscribers, and a network architecture that protects the future. And of course, it all has to fit within the PTT credit allocations of 7 billion francs for the 1983-1985 period.

This first Convention of Cities with Cable, organized by the Community Improvement Syndicate of Marnes-la-Vallee and the Federation of Independent Audiovisual Units for Social Creativity and Communication, gathered more than 500 participants representing local collectivities, the PTT and communications ministries, programming enterprises, and industrialists, for discussions and an equipment exhibit.

Opening the proceedings, Mr Filoud and Mr Mexandeau, ministers of communications and the PTT respectively, pointed out the stakes in cable networks. But while the first limited his talk to matters of teledistribution, the latter extended his speech to videocommunications.

The ministers also announced the nomination of Mr Schreiner to head a teledistribution task force which will have to assist in the formation of the first networks and the financing of the first topical program producers.

PTT Plan of Action

Reviewing the equipment plan for the next three years, which foresees PTT orders for 100,000 connections in 1983, 300,000 in 1984, and one million in 1985, Mr Mexandeau emphasized that this is "a deliberately slow pace in the light of the delay between equipment orders and effective connection of subscribers (two years), which is necessary to leave sufficient time for our industry and society to adapt to the opportunity that is being offered. Let us not delude ourselves, even if we proceed with determination, cable (or at least interactive videocommunications networks) are not for tomorrow but for the day after?" This is a fundamental point for the benefit of industrialists who are wondering about PTT's action.

The minister indicated that the orders to be placed against the 1983 budget will at first cover the cities in which experiments are being conducted, or which have shown very early interest in videocommunications; he mentioned Montpellier, Biarritz, Lille, Montbeliard, and Dunkerque. He also spoke of several geographical lines along which interconnected videocommunications networks are to be developed (the country's entire coverage not being planned before 15 years). One of these privileged lines would be the one formed by the left bank of the Seine, west of Paris, up to Calvados.

As for the research and development effort demanded from our industry, Mr Mexandeau indicated that it will cover optical technologies "although that does not mean the abandonment of existing production capabilities for coaxial technology, which represents the first generation of cable networks. The idea is to prepare the industrialization of a first generation of optical networks, and of immediately starting the study of second generation optical systems which will become integrated into a future digital, multi-service, wide band national network."

For this purpose, the minister named the consultation started before the end of this month "aimed at selecting, as soon as June, one or several industrial joint ventures with whom will be negotiated model agreements for DGT (General Directorate for Telecommunications) orders in 1983 and 1984. The consultation and agreements will make it possible to order systems either with the government as prime contractor, or under industrial contracting."

Lastly, Mr Mexandeau asserted that "teledistribution services are not the only units whose development will be made possible by cable networks. All of interactive telematics will be progressively integrated into this project."

Technical Controversy

Exactly how will this approach to cable networks be reflected in the infrastructure?

This was the topic of a discussion on technological choices, an ubiquitous discussion at Telecables 83, whether at round tables, at equipment displays, or especially behind the scenes of the show. What are the possibilities?

First, the facts. The PTT consultation does not impose a specific technology for manufacturers, but rather provides the functional characteristics of networks. It does however stipulate the priority which PTT intends to assign to the short term development and implementation of optical fibers, by preaching an evolutionary system with star-shaped distribution and optical fibers. Manufacturers for a test model and for networks will be selected on the basis of the costs and technical solutions they will offer.

This approach does not seem to displease the Thomson group, which is planning various technical-electronic scenarios around a system intended to connect a cluster of subscribers to a central station which provides all the programs. This cluster of subscribers is star-connected to a selection center through optical fiber cables.

Conversely, CGE in the name of realism deems it preferrable to begin by installing coaxial networks at a rather low cost (less than 3000 francs per connection), so that the funds thus made available can be invested in optical networks. Using this approach, the two technologies could then overlap one another.

At CGE, service to subscribers is considered to be a primordial concern: if the public rejects the programming that is offered, the cable network operation will fail completely, PTT--after the 100,000 and 300,000 connections ordered in 1983 and 1984--will discontinue the funding, and the industry will simply have to reconvert its production tooling. What CGE fears--a fear shared by other manufacturers--is that because of limited credits and shortened deadlines, the PTT consultation will lead to a minimal service of a single video channel, a situation which would be unmarketable. CGE believes that it would not be desirable to offer less than two video and one hi-fi channels, as proposed by the CODITEC report, and as allowed by its coaxial system (which it can make interactive for a surcharge of 1500 francs per connection).

Technical-Economic Compromise

But at Thomson--which has just been retained by the Lille Urban Community for the first phase of 50 connections in its cable network--the technical limitations of optical fibers, or more exactly of their end components (laser diode or light-emitting diode-LED), are being refuted. If LED's can handle only one video channel per wavelength, the number of channels simultaneously reaching a subscriber can be doubled or tripled by frequency or wavelength multiplexing (but at a price). Moreover, using a quasi-standard remote control unit, a subscriber could pick from the selection center one, two, or three programs among the twenty or more that are available. Finally, Mr Etienne of LTT (Telephone and Telegraph Lines) played a trump card by indicating that his group was aiming at 3000-4000 francss per installed connection, for a market of one million connections in 1985.

SAT (Telecommunications Corporation)--present at the show through the SAT-Silec-Tonna Electronique group, which has a strong position in cable networks with more than 50,000 installed connections--kept out of the technical controversy. It is of course true that it cannot afford to scatter its efforts, being fully involved in the Biarritz integrated network.

Finally, Mr Picard, head of the industry department at DAII, believes that "it would be a mistake to burden the industry with technologies that are last in the race. Conversely, even if it presents some risks, we must opt for technologies which we know are certain to make it."

As we have said, this technological controversy hides economic and industrial stakes among groups and even within them. For instance, CGE, which has large coaxial cable interests and which urged the use of conventional cable networks, is accused of trying to make its investments profitable. But at the same time, within the group, CIT-Alcatel is impatiently awaiting to get to RNIS through cable networks. Similarly, Thomson, which also has coaxial cable interests, is planning to profit from them by building coaxial cable transfer lines, while proposing the use of optical fibers. But some, mistrustful of its technological wild cards, are wary of its daring solutions.

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TRANSPAC NETWORK EXTENDS SERVICES, INVESTS FR 300 MILLION

Paris ELECTRONIQUE ACTUALITES in French 28 Jan 83 p 7

[Text] The Transpac company, which uses the public network of the same name for data packet transmission, is beginning a new expansion phase this year, to reach a level of 15,000 accesses in service, with a significant development of accesses through the telephone and Videotex networks. This program will require 300 million francs of investments, planned this year for the Transpac network.

At the end of 1982, the Transpac network offered 9400 ports (8470 of which through direct connection, and 930 through telephone and telex networks). As part of the professional Teletel service, nearly 800 Videotex ports are available throughout the nation; they allow the connection of service providers to Minitel terminals leased by PTT, and more generally to all Teletel-compatible terminals, via the telephone network and Transpac.

The second half of 1982 was marked by a strong expansion in the network's capacity, characterized by the installation of three new switches (Paris-Beaujon B, Paris-Archives B, Nice), and 25 additional internodal trunks. The result is a better guarantee of traffic reliability and flow throughout the network. Moreover, to the existing international relations with EEC countries, Switzerland (via Euronet), the United States, Germany, Spain, and Portugal, new connections have been added with Belgium, Canada, England, Finland, Sweden, and Japan.

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FRANCE

BRIEFS

THOMSON PLANT AT FUMAY--The Thomson group will manufacture optical-fiber subscriber patch cords at Fumay in the Ardennes. This project will be carried out in the plant of its subsidiary, Cabeltel, and will create 100 jobs between now and 1985. This plant, we note, already employs 520 persons and has an annual turnover of 180 million francs in telephone and optical-fiber cables. [Text] [Paris ELECTRONIQUE ACTUALITES in French 4 Mar 83 p 8] 9399

CGE-INDONESIA CONTRACT--SUBMARCOM [expansion unknown], a joint-venture subsidiary of CIT-ALCATEL [International Telephone Company - Alsatian Company for Atomic, Telecommunications and Electronic Construction] and Cables de Lyon, has been awarded a contract to build the Medan (Indonesia) - Singapore submarine telephone cable. The contract represents an investment of 222 million francs. This underwater cable, 345 nautical miles (640 km) long and using the S-12 system, will have a capacity of 1,260 channels. It will be equipped with 73 receivers [as published] and 5 equalizers. This link represents the first contract obtained by SUBMARCOM in Southeast Asia. Aside from the interest attaching to this first contract as a reference, the Medan-Singapore link is also the first section of a planned cable between Asia and Europe via the Red Sea and Indian Ocean. SUBMARCOM is thus in a good position to participate further in this project. [Text] [Paris ELECTRONIQUE ACTUALITES in French 18 Feb 83 p 7] 9399

CGCT-ARGENTINA CONTRACT--CGCT [General Telephone Construction Company] has just received an order for two Metaconta 11A telephone exchanges, each with a capacity of 20,000 lines, to be installed in Buenos Aires in 1984. This order covers the first part of the contract signed last year between CGCT and ITT's [International Telephone and Telegraph Company] Argentine subsidiary, CSEA [expansion unknown], for the furnishing of 150,000 telephone lines to the Argentine telecommunications administration, ENTEL [National Telecommunications Company]. [Text] [Paris ELECTRONIQUE ACTUALITES in French 18 Feb 83 p 7] 9399

PTT FIBER OPTICS SYSTEM--The PTT administration intends to order first generation systems with distribution by fiber optics for local videocommunication networks. These systems will be ordered either with the administration or manufacturers (turnkey networks) as the prime contractor. The consultation concerns a volume of orders for equipment amounting to 400,000 interconnectable units [?] in 1983-1984 and up to 1,000,000 interconnectable units [?] as a maximum in 1985. These orders will be included in the agreement package signed by the companies or groups of companies engaged Eight industrial companies which manufacture telecommunications and teledistribution systems were consulted and a large amount of information was distributed to companies sapable of manufacturing certain sub-assemblies. Since the consultations were "open," other companies besides those consulted or informed can participate. [Text] [Paris LES ECHOS in French 8 Feb 83 p 10] 12230

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ITALY

PLANS, RESOURCES FOR ELECTRONICS INDUSTRY AT MILAN EXHIBIT

Paris ELECTRONIQUE ACTUALITES in French 4 Mar 83 pp 1, 26

[Article by J.P. Della Mussia: "Italian Electronics: Ideas, Plans, and Means?"]

[Text] Milan—It is an Italian electronics sector overflowing with private initiatives and plans which, from 22 to 26 February, was presented to visitors to Bias Microelectronics in Milan. This fair, almost half of which was devoted to components this year, has enjoyed unquestionable success but is retaining a distinctly national flavor, even though the products displayed are from various sources. A few figures will serve to denote the magnitude of this exhibition: 25,000 square meters of space used compared with 20,000 in 1980 for a comparable exhibit; 1,194 exhibitors (distributors and represented firms) compared with 1,123 in 1980; 74,000 visitors this year compared with 65,000 in 1980 (of whom more than 5,000 were visitors from 45 foreign countries compared with 6,500 in 1980; in fact, the foreigners present in the aisles were, in general, only representatives of foreign companies exhibiting or seeking displays and not buyers as at Bias Electronics, for example.

Thus, through Bias, the Italian electronics sector appeared very dynamic and quite free of all controlling administrative constraints for the simple reason that no one here is counting on aid from the public sector, whatever its announced intentions (which, moreover, change from year to year without almost ever being realized). No one in Italy is afraid to engage in the manufacture of a product which will be in competition with those proposed by national war-horses such as Olivetti.

For example, this year several dozen Italian companies will each be manufacturing several hundred home computers. About 10 of them will produce between 1,000 and 2,000 units. In Italy the spirit of initiative is truly not dead. And it does not matter if a company must purchase its components abroad to succeed in producing the best possible system. And it does not matter if it is necessary to subcontract assemblies in Taiwan to be competitive.

Let us not be afraid of the methods employed: for example, without any problems Selcom Electronics exhibited a home computer under the brand name, Lemon II, and all its accessories were totally identical to those of the Apple II! Apple is furious, but, meanwhile, the Lemon II is being sold.

At Bias this dynamic atmosphere was reflected in the optimism of the exhibitors and, in particular, in that of the distributing representatives and, in some instances, the subcontractors who occupied most of the stands. But we must not exaggerate the importance of this phenomenon. Most of the turnover, here as elsewhere, comes through dealings with large companies. And the health of the latter depends very much on the sector in which they are operating.

A Flourishing Military Sector

If we take an average, as a certain distributor points out, the Italian electronics sector appears as a means of bridging over the present economic situation, decreasing the effects of any crisis and overabundance. However, when examined closely, the situation appears quite different.

Thus, the data processing sector is considered very lucrative in Italy's electronic component circles. Everyone here is pleased to see Olivetti getting ready to produce 100,000 home computers (based on the Z8000) in 1983. As we have said, about 10 companies are, moreover, expected to produce 1,000 to 2,000 units this year; 95 percent of these home computers are to be based on the Z80 which is all the more in favor with the Italians inasmuch as their national manufacturer of semiconductors, SGS /General Semiconductor Company/, manufactures this minicomputer—and is offering it at a particularly attractive price, it seems.

There is also optimism in the business machine sector, thanks once more to Olivetti which, among other things, produced about 300,000 electronic typewriters in 1982 based on the Z80.

The telecommunications sector is considered to be in a phase of revamping. This sector was not very lucrative in 1982 but should perform better in 1983. As for the future, there is cause for excitement; component suppliers are presently leaving no stone unturned to "participate" in large projects just getting underway. Videotel (the equivalent of Teletel) is expected to give rise to a substantial market at the end of 1984 or the beginning of 1985. As for the telephone, the CODEC market is expected to emerge at the end of 1983 or beginning of 1984, and the DTMF circuits market at the end of 1984 or beginning of 1985.

In the automatic sector there is a major crisis in Italy, at least with regard to large groups. Small companies are getting out of the venture without loss by profiting from the conversion of Italian PMI's /Small and Medium-Size Industries/ from the mechanical system to the electronic.

The automobile industry continues to be a lucrative market. The growth seems to cause no surprise.

In the military sector there is euphoria. Everyone here is pleased to point out that Italy has become the fourth-ranking Western power in the military sphere; the growth of this market is considered to be very, very important, thanks, particularly, to recent regroupings of the armed forces.

In the general public sector, however, the crisis appears quite serious. All eyes are turned toward Zanussi and possible European accords; there are great hopes, but those who are more realistic are pessimistic: "In case of an accord, who would make the important decisions in the future? A non-Italian company? Our spirits are not ripe for such a possibility."

To the major crisis in the general public sector was added a minicatastrophe in January: to be precise, the Italian authorities decided to add a 16 percent supplementary tax to products purchased by the general public in addition to the 18 percent already applicable on finished goods. Suddenly, in the television field alone the turnover in January fell to 16 billion lire (1 franc = 200 lire) compared with 200 billion lire in January 1982. Afterwards, the authorities decided to limit the supplementary tax to 8 percent.

On the overall level, despite this rather positive picture on the average, the Italian component sector speaks of a 1983 which will "still be in a recession." Certain distributors hope for a recovery in September (understand: an increase in the prices of components). Another expressed the following opinion: a recovery in Europe would arrive 6 months after a recovery in the USA: but we need another 6 months for it to arrive in Italy...

$4.75 Billion in Data Processing and Telecommunications

The Bias directorate, in turn, combining several sources of information, has attempted to "put a figure" on the Italian electronics market. Thus, for 1983 it estimates $2.45 billion for data processing and $2.3 billion for telecommunications. With regard to occupational and industrial equipment, only 1982's results are furnished: $1.1 billion, a 50 percent increase over 1981. 1982 was considered "critical" for electronic components, with a real decline in demand. For semiconductors the Italian market is estimated at $300 million in 1983 compared with $250 million in 1982. Again according to the Bias directorate, the uncertain situation of the general public is expected to be offset by increased activity in the area of automation, robots and telematics. Between 1982 and 1986, the growth of the telematics sector is expected to be 40 to 50 percent, with the market reaching $200 million in 1986. There would be similar growth for CAD systems whose market is expected to increase from $22 million in 1982 to $60 million in 1985. Moreover, the electronic security market would show a growth of 30 percent. Finally, in 1982 [as published] the Italian market is expected to have absorbed 26,000 minicomputers ranging in price from $2,800 to $11,000, or a market of $80 million.

No Arrangement for National Support in Components Sector

The Bias directorate observes that there is no arrangement for national support in the electronic components sector. It notes only that a national program for research in microelectronics at an overall cost of 210 billion lire spread over 5 years had been arranged by the former minister of the Department for the Coordination of Scientific Research. In addition, in telecommunications a 10-year plan calling for investments of 29 trillion lire is still being foreseen. In the general public sector, in the spring of 1982

CIPI (Interministerial Committee for Industrial Policy Coordination) approved a budget allocating 240 billion lire over a period of 2 years to restructure the sector. Lastly, an automation-robot plan is being contemplated.

As an innovation, the regions are participating in the initiatives. For example, the Lombard Region has a program entitled: "Plan of Technological Innovation for the PME [Small and Medium-Size Businesses]"; the Piedmont Region has a similar program; lastly, the Region of the Marches has contributed to the establishment of the Electronics Institute of Industrial Quality.

A Very Commercial Show

This year, Bias put on a highly commercial show in that 27 percent of the exhibitors dealt with manufacturing activities while the others were representatives, distributors, subcontractors or manufacturers also representing their products. The principal activity of the exhibitors was confined to components (49 percent of the exhibitors); but testing and production systems were also well represented (12.3 percent) as were laboratory instruments (11.4 percent) and minicomputers (7.1 percent). A home computer section was opened this year, which slightly increased the number of stands (3.7 percent of the exhibitors) and especially the number of young visitors. This year at Bias, nearly one visitor out of three was a student; 18 percent of the visitors were interested in home computers. (The home computer is a success in Italy: 1,700 shops sell them! In addition, 31 percent of the visitors were interested in components, 19 percent in instrumentation, 18 percent in minicomputers, 14 percent in production and testing and 11 percent in telecommunications.

French representatiion was rather light at Bias (5.5 percent of the exhibitors, 8.7 percent of the foreigners), especially compared with that of the USA (26.9 percent and 42.4 percent respectively), Germany (10.8 percent and 17 percent respectively) and even Great Britain (7.2 percent and 11.3 percent respectively). Thomson-CSF was not represented either directly or through a distributor's stand. Generally speaking, French companies are content with their representatives in Italy, sometimes after an unfortunate trial. The most successful French products are those of a passive nature for operational and industrial application (connectors, casings, capacitors, optic fibers...). Moreover, it seems that in French component circles, the Italian distributors are rather well known and that the French selections are made in terms of their vocation (professional equipment in that which concerns the French), their missing cards and, of course, their previous successes. The French believe that Italian electronics, by sectors, is now based rather closely on French electronics, and they are trying to profit from the fact that Italian component manufacturers are not very high up on the scale of such manufacturers.

The exhibitors in general at Bias did not yet know that the French authorities recently held high-level meetings in Italy to consider possible common action in the data processing and telecommunications fields, action which would go far beyond takeovers and various types of participation in this or that company.

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